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JOURNAL *of the* AMERICAN DIETETIC ASSOCIATION

CLINICAL EXPERIENCES WITH HYPOGLYCEMIA[1]

J. M. NIELSEN, M.D.

BEFORE a discussion of experiences with hypoglycemia it is well to clarify what one means by the term. It is not well-defined. Some authors consider a blood sugar concentration of 70 mg. per 100 cc. within the normal limits. Readings as low as 40 mg. have been obtained at times when the patient was neither in insulin shock nor in coma. Yet readings below 80 are certainly not the rule in patients who are perfectly well. In this article, hypoglycemia is defined as a state in which blood sugar concentration in a given case as determined by the usual methods is 75 mg. or less per 100 cc. of blood.

Clinically, hypoglycemia as compared with other pathological states is fairly common. Certainly a great many persons are born with a tendency to low blood sugar. This statement is based on the frequent finding of low blood sugar concentration when studies are made routinely as patients enter sanatoria. Further, when the clinical records of these patients are studied it is seen that the low concentration occurs in two classes of patients, namely, epileptics and patients with vegetative imbalance.

Epileptics will not be further discussed as a special group in this paper. The relation between hyperfunction of the pancreas, hypoglycemia, and epileptiform convulsions is too well known to require any elaboration.

Patients with vegetative imbalance are still more numerous than epileptics and their symptoms are not sufficiently understood. It is commonly stated among practitioners that if a patient has a long list of symptoms he is probably a neurasthenic. At any rate there is a strong tendency for physicians to ascribe symptoms which they do not under-

[1] Read before the annual meeting, California Dietetic Association, Pasadena, September 1, 1934.

stand, to the *mind*. However, the more one knows of internal medicine the less one has to ascribe to such an unknown structure.

The vegetative nervous system is structurally connected with the central nervous system in that many of the cell bodies, the prolongations of which form the sympathetic nervous system, are located in the brain and spinal cord. But functionally the two nervous systems are largely independent. Cannon of Harvard has removed the entire sympathetic nervous system of a cat and has exhibited the nervous system pinned on a board with the apparently happy cat lying beside it. Of course, we could not ask the cat how she felt about it.

The vegetative nervous system, however, has many ramifications in the body and plays a great part in the regulation of the glands of internal secretion. It thus comes about that disturbances in the sympathetic nervous system may have wide influence on these glands and produce a multitude of symptoms.

I shall not name all the symptoms commonly complained of by patients with vegetative imbalance, but will mention a few. The patients suffer from chronic fatigue, feel just as tired on arising in the morning as on retiring at night. Periods of depression are common. The patient says: "I don't have the energy I should have. My eyes get blood shot; I have too much saliva in my mouth. I get short of breath as though breathing does no good. I get so hungry before meals that if dinner is not ready on time I just have to take a bite of something. I have a natural craving for candy, but when I eat it my stomach bloats. I have soreness about my gall bladder and my stools are light colored like clay. My skin is tender and I have a feeling in my head as though I were about to catch a cold most of the time. I feel as though I go about in a daze all the time." At about this point in the recitation the physician concludes that the patient is a neurasthenic and ceases recording the complaints.

Such patients get along better if they are fed frequently, about six times a day, and if they avoid sweets. It is true that they feel better immediately after the ingestion of sugar but the reaction to it is bad. A moderate ketogenic diet and several weeks rest, if they have come to a sanatorium, are indicated. But such persons should not try to compete on the same basis with others in work or competitive games, because they are simply not constituted for strenuous work. They are usually of the intellectual type and do mental work better than physical.

The question arises whether it is entirely safe to place a patient on a ketogenic diet and leave him thus without supervision. Dr. Howard

West of Los Angeles has studied a case of epilepsy in a boy who was thus treated. After a few years the patient went into diabetic coma. I have on record a somewhat similar case in a man with constitutional vegetative imbalance, except that he did not have a complete diabetes and did not go into coma. I have waited several years for another case so that further studies could be made, but such opportunities are evidently extremely rare, and the case, I believe, should now be placed on record.

REPORT OF CASE

The case was that of a man of 56 years who had suffered during the greater part of his life with an array of symptoms which had incapacitated him and made his life miserable. These included emotional depression, chronic exhaustion, hyperacidity, abdominal pains, hypotension, bloating in the abdomen, anorexia (he would go without eating for 2 or 3 days), and a long array of other neurotic symptoms.

Of family history the significant facts may be cited that the patient's mother had died, probably by her own hand, before she was 30. She had had chronic mental depression. One sister was at a sanatorium for emotional depression and one maternal cousin had depressive attacks.

In childhood the patient had had measles and some chronic intestinal trouble. At the age of 36 he had had stricture of the urethra and this had been dilated surgically. Shortly after this he had had a hemorrhoidectomy and this operation was later performed again. At the age of 50, a surgeon had removed the patient's appendix in the hope of relieving the abdominal pains. He had also had a turbinectomy, tonsillectomy and removal of several abscessed teeth.

The patient was 63 inches tall and weighed 116 pounds. Blood pressure was 104 to 80 systolic and 70 to 50 diastolic. The pulse was 52, regular in rate and rhythm. The brachial arteries were soft. The skin was warm and dry. Enlarged glands were not felt and eruptions not present. The thyroid gland was not palpable. The chest expansion was good, quiet vesicular breathing being present throughout. Heart tones were clear, apex beat forceful.

The second pulmonic sound was rough, louder than aortic second. Apex beat was 9 cm. to the left and dullness extended to the right sternal border. The electrocardiogram was normal. The abdominal wall was very thinly covered with fat. There was no tenderness, but some gaseous distention. The liver and splenic dullness were normal. There was a chronic epididymitis on the left.

A neurological examination from the standpoint of organic disease was negative but from the standpoint of a functional vegetative imbalance there were many symptoms and signs which pointed to such a disturbance. These were: mental and physical fatigability, depression, insomnia, loss of power to increase endurance by training, sleepiness and grogginess, dryness of the hair, swelling of eyelids, narrow palpebral fissures, Aschner's sign (bradycardia produced by pressure on eyeballs) positive, congested sinuses, tinnitus, absence of pharyngeal reflex, high alveolar CO_2 tension, bradycardia (pulse rate 52 per minute), hypotension $\frac{(104-80)}{50}$, sinus arrhythmia, vasomotor disturbances, hypermotility of the bowels, light colored stools,

spastic colon, mucus in the stools ("mucous colitis"), low basal metabolic rate (−16), pollakiuria, and cold and clammy hands and feet. Contrary to what one would expect in such an array of symptoms the patient did not have hypoglycemia. On the contrary, a glucose tolerance test gave the following:

	Starv.	*½ hr.*	*1 hr.*	*2 hr.*	*3 hr.*	*4 hr.*
Blood sugar in mg. per 100 cc. whole blood	106	194	208	204	114	95
Urine sugar in mg. per hr.	5	37	1,072	2,240	1,144	1,318

Other "starvation blood sugar" determinations on two days gave 80 and 100 mg. respectively. Blood calcium was 11.3 mg., uric acid 5.1 mg. per 100 cc. of blood. Other and extensive laboratory examinations including barium meal, blood count, blood chemistry, liver function tests, gastric analysis, stool examination, urine examination, gave nothing of note except as summarized above.

Consultation was obtained at the time with a specialist in diabetes, who, because of the marked glycosuria associated with a rather prolonged high blood sugar level during the glucose tolerance test, was of the opinion that an early diabetes was present. The question before us was how to treat the patient.

After carefully weighing the situation, I felt that if the patient were treated with diabetic diet his neurotic manifestations would be greatly augmented because of a poor state of nutrition and a poor appetite. Could this be a developing diabetes due to an insufficiently stimulated pancreas?

I proposed the following program to the patient and he accepted it. He was to remain under daily observation and go on a high carbohydrate diet. He was to have ice cream, cake, sugar, sweet potatoes, dessert, as offered, plus anything else he might choose. A careful watch for diabetes was to be maintained.

No undesirable symptoms appeared. Clinically, the patient was considerably better in two weeks. The improvement continued but after four months I nevertheless insisted on a glucose tolerance test. It gave the following:

	Starv.	*½ hr.*	*1 hr.*	*2 hr.*	*3 hr.*	*4 hr.*
Blood sugar in mg. per 100 cc. whole blood	77	159	159	159	100	53
Urine sugar in mg. per hr.	8	13	60	201	35	13

This was so much better that the patient was allowed to go home, to return after another 4 months on a similar diet. He did not return until 14 months later at which time the curve was:

	Starv.	*½ hr.*	*1 hr.*	*2 hr.*	*3 hr.*	*4 hr.*
Blood sugar in mg. per 100 cc. whole blood	80	135	133	70	51	70
Urine sugar in mg. per hr.	18	11	3	7	79	7

The treatment had been overdone but certainly there was no diabetes present. The patient was still much better clinically than at the start. The question of whether diabetes can actually arise from pancreatic inactivity due to low carbohydrate diet seems suggestively to be answered in the positive.

Because of these experiences I have arrived at the following dietary plan in cases of vegetative imbalance. The patient is ordered not to eat sugar or sweets at any time, but all other carbohydrates are permitted except that a limit is placed on potatoes. He is asked to use plenty of butter. He is to have three regular meals a day and in addition three lunches, at 10:30 A.M., at 3:30 P.M., and at bed time. He is not to weigh his diet because such strict attention to himself increases the neurotic factors and makes the patient clinically worse. He may eat anywhere and in general lead a normal life. The same sort of plan but much more accurately carried out and with the addition of marked restriction of fluid intake is used for epileptics. A careful check is kept on the blood sugar concentration and general symptoms to avoid creating a case of diabetes.

727 W. 7th St., Los Angeles, California.

ABSTRACT OF DISCUSSION

DR. MILO K. TEDSTROM, Los Angeles: I think it is very fitting that you have asked Dr. Nielsen to present a paper on hypoglycemia before your group, because of the increasing frequency with which this condition is being found and because our present medical management is largely a dietary one.

As Dr. Nielsen has pointed out, the severity of the symptoms produced by a lowering of the blood sugar are not necessarily in direct relationship to the height of the blood sugar. Severe symptoms may be noted with a blood sugar that is practically normal, and no symptoms may be noted with a blood sugar that is quite low. Glucose tolerance studies carried out to fifth and sixth hours are usually necessary to prove diagnosis of hypoglycemia, as single blood sugar determinations may be normal. Then, too, feeding of carbohydrates may not relieve the attacks.

Hypoglycemia may be produced by a variety of pathological changes which we do not have the time to go into in this discussion. I am therefore limiting myself to the hypoglycemia which is secondary to so-called "hyperinsulinism."

At present we have no means of differentiating, clinically, hyperinsulinism produced by the hyperfunctioning of normal islet cells from that due to an adenoma of the pancreas. The symptoms are usually more easily controlled where there is a simple hyperfunction of the islet cells.

It is the treatment of latter form of hyperinsulinism that we wish to discuss chiefly, and it is assumed that the condition results from faulty nervous regulation of the insulinogenic apparatus.

The medical management has been largely dietary. At first, the dietary treatment consisted of a high carbohydrate intake with between meal feedings of carbohydrates. While this controlled the symptoms, it was known that the excess of carbohydrate stimulated the pancreas to produce more insulin. This is well illustrated by Dr. Nielsen's case report and it has been demonstrated that a diabetic's tolerance for glucose can be increased by a higher sugar intake.

The next dietary regime suggested was that of a high fat and low carbohydrate intake. Theoretically, this should solve our problem as such a diet would not stimulate the insulin-producing cells. However, these individuals do not seem to get along very satisfactorily on this diet. Consequently, the diet required some modification. By adding extra feedings of carbohydrate between meals our patients seem to do very well.

Dr. H. J. John, of the Cleveland Clinic, has reported the successful treatment of a patient with so-called hyperinsulinism. He placed his patient on a high fat and moderately low carbohydrate diet, and gave her insulin, 10 units, immediately after each meal. She has done very well on this plan, and after about 6 months was able to discontinue insulin without recurrence of attacks.

Recently I had under observation a male, age 52, with epileptic seizures brought on by hypoglycemia. He had not been doing very well on a higher carbohydrate diet with extra feedings, so we induced him to try a high fat and low carbohydrate diet and to take 10 units of insulin immediately after each meal. Because of his business, it was difficult for him to take this after his noon meal and so he took only 8 units after breakfast and after the evening meal. This has resulted in very remarkable improvement. He has had no further seizures, has felt very well, in fact better than for several years, and has gained about 20 pounds weight.

Thus it seems to me that this new regime suggested by Dr. John may produce better results than the other forms of therapy previously used.

DIABETIC AND LOW CALORIE FOODS: A STUDY OF NUTRITIVE VALUES[1]

VERZ R. GODDARD, FLORENCE M. SANDIFUR AND THELMA BEATTY[2]
University of California at Los Angeles

THE redraft of the Food and Drug Act, proposed in 1934, reflected in some measure a quickening of public interest in more complete information regarding food preparations, especially those sold in labelled packages. It is difficult, at times, to obtain plain, pertinent facts, unembellished by opinionated claims of advertisers.

The special foods discussed in this report are among those advocated for diabetics, overweight individuals and others on low carbohydrate diets. The study was undertaken at the suggestion of the dietitian in charge of the outpatient clinic in a large hospital, who was in search of facts regarding the relative nutritive values and costs of the products chosen by her patients.

In selecting the foods to study, we were not guided by any preconceived judgment as to their relative merits. We hoped that our lists might include representative products of all the types easily available to the public in Southern California. Because of the length of the lists, it was necessary to omit certain individual products somewhat similar to others listed earlier. Certain products were omitted because we were unable to obtain complete data regarding them.

The data for this comparative study have come from the producers finally. Our first approach was through "health stores" and department stores having food departments. From them we obtained lists of foods commonly sold to diabetics. It was soon realized that there were few commonly used foods, high in carbohydrate, which were not sold in a special form to diabetics or others on limited calorie diets. Clerks in the "health stores" were frequently coöperative and willing to give information regarding the products. We wrote to many commercial concerns and obtained descriptive pamphlets and letters regarding the products. But our most valuable sources of information were the labels which, in accordance with legal requirements, stated relatively accurate percentage compositions. In the case of a few locally-made diabetic breads, which were not packaged or labelled, we calculated the percentage composition from the bakers' formulae.

[1] Received for publication, January 7, 1935.
[2] Leota Buss gave technical assistance in preparing the paper for publication.

TABLE 1

Diabetic Foods

	SIZE PKG.	COMPOSITION PER 100 GRAMS							
		Avail. Carbo.	Prot.	Fat	Ash	Moist.	Non-usable Carbo.	Available Glucose	Calories
		gms.	gms.	gms.	gms.	gms.	gms.	gms.	
Flours									
Energen Flour[1]	1 lb. 7 lb.	59.9	24.68	3.5				74.6	370
Gluten Flour[2]	5 lb.	43.33	44.81	1.8	.77		9.29	69.5	369
Loeb's Pure Gluten Flour[3]	1 lb. 5 lb.	43.	41.	2.				67.0	354
100% Pure Gluten Flour[4]	1 lb. 3 lb.	30.86	40.9	1.64	1.01	7.57	9.00	54.7	302
Loeb's Self-rising Gluten Flour[3]	1 lb. 3 lb.	40.	38.	2.				62.2	330
Casein Palmnut Dietetic Flour[4]	30 oz.	0.	56.9	.5	6.6	7.	28.9	33.	232
Casein Gluten Flour[3]	2½ lbs.	33.5	44.4	1.8	1.1	9.		59.4	327
Dia-mel Dietetic Casein Flour[4]		0.	48.5	.53	8.78	7.36	34.83	28.1	199
Cellu Casein Flour[6]	2 lb.	0.	41.	.84				23.9	172
Starchless Bran[2]	5 oz.	1.32	16.48	5.				11.4	116
Loeb's Pure Bran[3]	1 lb.	5.	19.0	6.0				16.6	150
Starch Free Bran[5]	2 lb.	0.	0.	0.				0.	0
Dia-mel Starch-free Bran[4]	1 lb.	0.	15.75	7.5		5.0	22.0	9.9	130
Cellu Pulverized Washed Bran[6]	1 lb.	0.	0.	0.				0.	0
Cellu Soy Bean Flour[6]	1½ lb.								
	4 lb.	8.	41.	23.				34.1	403
Soy Flour[3]	14 oz.	2.6	40.8	18.3	4.35	4.3		28.1	338
Cellu Flour[6]	2 lb. 5 lb.	0.	0.	0.				0.	0
Dia-mel Low Calorie Flour[4]		0.	3.37	.56	2.08	9.13	84.86	2.	19
Dia-mel Neutralized Flour[4]		0.	23.4	.42	8.15	6.14	61.89	13.6	97
Cellu One-Two-Three Flour[6]	15 oz.	2.3	2.3	4.7				4.1	61
Wheat flour, white*	24½ lb.	74.8	11.4	1.0	.5			81.5	354
Breads									
Energen Bread[1]	384 gms.	44.36	35.94	5.47		6.		65.3	367
Gluten Bread[2]	1 lb.	13.	25.	0.				27.6	153
Gluten Bread**	1 lb.	27.0	25.5	1.9				42.0	227
Genuine Gluten Bread[3]	8 oz.	35.	44.	6.				61.1	370
Gluten Bread, Dia-mel 100%[4]	4½ oz.	24.88	43.15	2.9			10.92	50.2	298
Loeb's Aerated Gluten Bread[3]	12 oz.	21.	50.	12.				51.2	392
Dia-mel Golden Gluten Bread Sticks[4]		28.7	41.1	4.03	1.6	6.11	9.23	52.9	315
Loeb's Gluten Bread Sticks[3]	2 oz.	36.	43.	6.				61.5	370
Aerated Gluten Rolls[3]	2 oz.	36.	44.	9.				62.4	401
White bread, wheat*	1 lb.	52.7	9.3	1.2	1.0			58.2	259
Crackers									
Gluten Biscuit[2] (40%)		26.4	41.89	1.25	1.4	7.2	21.32	50.6	283
Pure Gluten Biscuit[3]	3 oz.	3.4	78.48	.97	1.7	6.7	7.58	49.6	340
Soy Bean Biscuit[3]	5 oz.	1.3	53.8	9.2		5.5	20.	33.3	303
Dia-mel Gluten Crackers[4]	7 oz.	26.4	40.0	11.54	1.67	7.19	6.59	50.8	369
Loeb's Dietetic Gluten Crackers[4]	3 oz.	35.	44.	6.				61.1	370
Karlbader Biscotten[3]	1½ oz.	18.	32.	40.				40.6	560
Cheese Tid Bits[3]	1½ oz.	17.	34.	38.				40.6	544
Digestive Biscuits[1]	16 oz.	45.84	23.8	24.68				62.0	500
Agar Bran Biscuit[1]		1.88	0.	0.				.9	3
Dia Biskit[7]	5 oz.	0.	0.	0.				0.	0
Loeb's Dietetic Bran Wafers[3]	4 oz.	5.	23.	10.				19.3	202
Cellu Cheese Wafers[6]		12.5	12.5	25.				22.3	325
Crackers, soda*	4 oz.	73.1	9.8	9.1	2.1	6.4		79.7	414
Cookies									
Loeb's Dietetic Gluten Cookies[3]	3 oz.	30.0	38.0	18.0				53.8	434
Loeb's Casein Sponge Cookies[3]	24 per pkg.	5.0	54.0	24.0				38.7	452

TABLE 1—*Continued*

	SIZE PKG.	COMPOSITION PER 100 GRAMS							
		Avail. Carbo.	Prot.	Fat	Ash	Moist.	Non-usable Carbo.	Available Glucose	Calories
		gms.	*gms.*	*gms.*	*gms.*	*gms.*	*gms.*	*gms.*	
Cookies—Concluded									
Loeb's Casein Lady Fingers[9]	24 per pkg.	6.0	50.0	27.0				37.7	467
Dia-mel Casein Lady Fingers[4]		0.						•••	•••
Dia-mel Casein Sponge Cookies[4]		0.						•••	•••
Loeb's Dietetic Lemon Snaps[9]	3 oz.	12.	42.	20.				38.4	396
Cellu Almond Wafers[8]	7½ oz.	25.	12.5	50.				37.3	600
Dia-mel Bran Cookies[4]	7 oz.	0.						•••	•••
Cellu Chocolate Wafers[8]	7½ oz.	12.5	2.25	25.				16.6	287
Dia-mel Snaps, assort. flavers[4]	7 oz.	0.	10.3	1.43	2.28	8.22		6.0	53
Ginger snaps[*]	1 lb.	76.0	6.5	8.6				80.6	407
Fig bars[*]	1 lb.	69.8	4.6	6.6				73.0	356
Lady fingers	6 fingers (75 gms.)	70.6	8.8	5.0				76.2	363
Cereals									
(Ready-to-eat)									
Dia-mel Breakfast Food[4]	8 oz.	0.	4.09	2.69	2.24	5.55	85.43	2.66	40
Dia-mel Gluto-Lax Breakfast Food[4]	8 oz.	19.34	33.63	3.25	2.09	9.04	32.65	39.3	243
Gluten Bran Flakes[2]	3 oz.	21.5	45.5	7.2		4.0	18.1	48.6	333
Cellu Bran Breakfast Food[8]	1 lb.	2.0	2.0					4.3	23
Loeb's Dietetic Gluten Rusk[9]		35.0	44.0	6.				61.1	370
Loeb's Bran and Gluten Cereal[9]		21.	34.	20.				42.7	400
Loeb's Breakfast Cereal[9]		26.	32.	19.				46.5	403
Starchless Breakfast Food[5]	1 lb.	0.	8.7	1.5	2.5	7.3	80.0	5.0	50
Bismeal[1]		47.3	35.2	3.52	3.5			68.1	362
Strength of Wheat "NGR"[1]	1 lb.	72.28	14.9	1.75				81.3	367
Cellu Soy Crisp[8]		2.0	4.0	0				4.3	24
Cellu Soy Flakes[8]		8.0	39.	22.				32.8	386
Whole Wheat Biscuit[*]	12 oz.	75.	11.	1.4				81.3	357
(Cereals to be cooked or served hot)									
Porridge Powder[5]	1 lb.	0.	2.7	1.1	6.1	10.9	78.9	1.7	20
Loeb's Dietetic Soya Farinette[9]		12.	45.	6.				38.7	282
Rolled oats[*]	3 lb.	64.5	15.9	6.0				74.3	376
Noodles and macaroni									
Cellu Noodles[8]	5 oz.	0.	6.0	6.0				4.1	78
Dia-mel Gluten Noodles[4]	3 oz.	41.	37.1	1.84				21.5	329
Energen Semolina[1]		68.75	19.42	1.76				80.2	368
Energen Macaroni[1]		55.5	31.7	1.76				74.1	365
Egg noodles[*]	8 oz.	75.2	11.7	1.0				82.1	357
Macaroni[*]	8 oz.	74.1	13.4	.9				82.0	358
Salad Dressings									
Cellu Mayonnaise[8]	8 oz.	.6	2.0	83.0				10.1	757
Cellu French Dressing[8]	½ pt.	.5	.25	70.0				7.6	631
Cellu Topping[8]	8 oz.	0	1.0	1.0				.7	13
No Fat Mayonnaise[5]	7 oz.	0						0(?)	0(?)
Ordinary mayonnaise[*]	½ pt.	3.6	1.8	77.0				12.3	715
Meat substitutes									
Protose Vegetable Meat[5]	1 lb.	8.3	18.0	10.4				19.8	199
Savita (veg. beef extract)[3]	1 lb.	5.6	29.0	.8				22.5	146
Nuttose[3]	1 lb.	6.1	14.5	28.2				17.3	336
Beef, rib, medium fat[*]	1 lb.	0	13.9	21.2	1.0			10.2	246
Beverages									
Cellu Hi-Fat Chocolate[8]	1 lb.	8.0	12.0	53.0				20.3	557
Chocolate, unsweetened[*]	½ lb.	30.3	12.9	48.7	2.2	5.9		42.6	611

TABLE 1—*Concluded*

	SIZE PKG.	COMPOSITION PER 100 GRAMS							
		Avail. Carbo.	Prot.	Fat	Ash	Moist.	Non-usable Carbo.	Available Glucose	Calories
		gms.	*gms.*	*gms.*	*gms.*	*gms.*	*gms.*	*gms.*	
Beverages—Concluded									
Cellu Carbonated Beverage[6]		0	0	0				0	0
Energen Cocoa[1]		35.	36.8	16.6				58.0	437
Kaffir Tea[2]	1 lb.	0	0	0				0	0
Minute Brew[2]	½ lb.	.3	2.0	1.5				1.6	23
Tea*	¼ lb.	0	0	0				0	0
Candies									
Lister's Sweets[5]	14 oz.	0						0	0
Dia-mel Dietetic Candy[4]	1 lb.	0						0	0
Loeb's Dietetic Chocolate Bars[3]	6 bars	9.0	14.0	49.0				22.0	533
Loeb's Dietetic Almond Chocolate Bars[3]		9.0	15.0	51.0				22.8	555
Loeb's Imitation Candy[3]	½ lb.	0						0	0
Loeb's Sugarless Sweets[3]									
Cellu Hard Gum Drops[6]	1 lb.	0	2.0					1.2	8
Cellu Cough Drops[6]	½ lb.	0						0	0
Cellu Sugar-free Bars[6]									
Cellu Lolly Pops[6]	3	0	2.0					1.2	8
Chocolate, sweet milk*	½ lb.	51.1	8.0	35.0				59.2	552

[1] Energen Foods Co., Inc.
[2] Battle Creek Food Co.
[3] Loeb's Dietetic Food Co.
[4] Dietetic Food Co.
[5] Lister Brothers, Inc.
[6] Chicago Dietetic Supply House.
[7] Vegetized Food, Inc.

* Not diabetic foods. Ordinary products inserted for purposes of comparison. Percentage compositions from Rose, M. S.: *A Laboratory Handbook for Dietetics*, 3rd ed. New York: The Macmillan Company.

** Average figures for three breads made and sold in Los Angeles.

*** Percentage protein and fat not stated.

The information on special flours, breads, crackers, wafers and cookies is given in Table 1. The ordinary market products: white flour, white bread, soda crackers, ginger snaps, fig bars and lady fingers are included in the list for purposes of comparison with the special products. The other foods follow in the same table, and are classified as breakfast cereals, noodles and macaroni, salad dressings, meat substitutes, beverages and candies.

By "available glucose" (Table 1) is meant the utilizable carbohydrate plus maximum glucose available from protein and fat. Assuming 58 per cent of the protein and 10 per cent of the fat to be glycogenic, the total available glucose of a number of the special breads, for example, does not differ so greatly from that of white bread.

There seems little advantage in tabulating the costs of individual foods, since market and currency conditions render such figures unstable. We did relate the costs (Table 2) of ordinary products (1934 prices) with those of equivalent weights of the special products, using averages of the

costs for a whole group of special products to draw the comparison. This gives at least an approximate idea of the price elevation of foods in these special classes. It is not surprising that in all cases the special foods cost more than the ordinary products. There is less demand for special foods; they are, for the most part, carefully packaged and labelled; and therefore the price per unit must be higher. The cost of chemical analyses for accurate labelling must also be considered. For example, we noted during the several years while our data were being collected

TABLE 2

Costs

ORDINARY PRODUCTS	SPECIAL PRODUCTS	RATIOS OF THE AVERAGE COSTS OF 100 GM. PORTIONS
Wheat flour, white	Gluten flours	1 : 8.4
Wheat flour, white	Casein flours	1 : 24.6
Wheat flour, white	Bean flours	1 : 6.2
Wheat flour, white	Brans	1 : 15.3
Bread, white	Gluten breads	1 : 16.3
Crackers, soda	Gluten crackers	1 : 10.3
Crackers, soda	Bran crackers	1 : 6.7
Crackers, soda	Unclassified (including bean crackers)	1 : 8.4
Lady fingers	Sponge and butter cake, cookies	1 : 4.8
Cookies (ginger snaps and fig bars)	Bran cookies	1 : 5.8
Cereal, ready-to-eat (whole wheat biscuit)	Gluten cereals, ready-to-eat	1 : 6.3
Cereal (whole wheat biscuit)	Bran cereals, ready-to-eat	1 : 5.9
Cereal, uncooked (rolled oats)	Porridge powder	1 : 12.3
Noodles and macaroni	Special noodles and macaroni	1 : 8.7
Mayonnaise	Special salad dressings	1 : 2.9
Beef, rib, medium fat	Meat substitutes	1 : 2.3
Chocolate, bitter, for beverage	Special chocolate for beverage	1 : 2.6
Tea	Special teas and brews	1 : 1.6
Chocolate, sweet milk	Special candies	1 : 4.4

that a number of firms published entirely new percentage composition figures for their products. Presumably, slight changes had been made in the formulae used and new laboratory analyses were necessitated. There are other services offered by well-ordered food supply houses (such as the maintenance of dietitians at the service of doctors who wish special diets calculated for their patients), the cost of which probably must be accounted for in the price scale of products.

The most commonly used diabetic flours are bran, gluten, casein, soy-

bean and Lima bean. These vary greatly in composition but all are lower in carbohydrate than white or wheat flour. It is to be noted that the available glucose per 100 grams varies more greatly in flours than in breads. Both the flours and the products made from them vary considerably in taste. Some of the "calorie-free products furnish bulk but would seem to have rather little satiety value.

The breakfast cereals listed in Table 1 are of two types, the ready-to-eat and those that are cooked or prepared by the addition of boiling water. They tend to be higher in protein than ordinary cereals and in some cases are less palatable. The available glucose is, for the most part, lower.

The diabetic candies and beverages, reported in Table 1, are seen to be much lower in available glucose than their very high-carbohydrate counterparts among ordinary foods, but their costs are, of course, higher. The salad dressings and meat substitutes reported in the same table are very low in available fat and are therefore lower in caloric values than are ordinary meats and commercial dressings.

While we did not tabulate the values for the canned fruits and vegetables among these special products, they are useful foods in the diabetic and reducing dietary. They represent ordinary foods canned without sugar or seasoning. The percentage compositions of the vegtables are similar to those of any canned vegetables. Since only water is added in canning, the percentage compositions of the fruits are slightly lower even than those of raw fruits. The cost elevation is much less than for any other large group of foods. Of the special canned fruits and vegetables which we studied, none cost twice as much as the ordinary market counterpart, to which sugar or seasoning had been added.

So far as we could determine, the food types especially recommended for diabetics, but not included in our lists, are for the most part without fuel value. They include baking powders, flavoring extracts, pickles, chili sauce, sugarless syrups, jellies, jams and a variety of thickening agents used in cookery. Some of the special desserts (omitted because of incompleteness of data), though low in carbohydrate, are fairly high in calories due to the addition of chocolate or cocoa.

Summary and Conclusions.—Special proprietary, diabetic and reducing foods vary greatly in percentage composition, even within food classes which are ordinarily homogeneous. Some of them furnish no calories and are of value merely for bulk. Some contain less carbohydrate or less available fat than the corresponding ordinary foods, while others contain as much potential glucose. Some are quite palatable,

others less so. While a large number of diabetic foods have been carefully analyzed and weighed out into uniform serving portions, there are some of which this is not true. The costs are quite variable also, but generally speaking the specially prepared diabetic foods are too expensive for common use by persons of somewhat limited means.

Acknowledgment.—We wish to express our appreciation to Lillian Giebelstein, Los Angeles County General Hospital, who suggested the subject of this study.

ANALYSIS OF MEAT AND FISH USED IN HIGH CARBOHYDRATE-LOW CALORIE DIABETIC DIETS[1]

A. F. FOWLER, M.D., AND ELEANOR V. BAZIN

THE purpose of the following analyses was to determine whether more liberal quantities of meat and fish may be used than at present in the treatment of diabetics with the high carbohydrate-low calorie diet (1).

Though it was suspected for some time that protein, *per se*, is harmful to the diabetic, it would now appear, according to the consensus of opinion, that the harmful effects of proteins are due largely to their potential sugar production. In view of the liberal quantities of carbohydrate allowed with the high carbohydrate-low calorie diet, the possible harmful effects of the potential sugar production may readily be overcome by reducing the amounts of carbohydrate-containing foods (bread, potato, etc.). A difficulty, however, which still remains in the use of liberal quantities of meat and fish is their fat content. We have now had five years of experience with the high carbohydrate-low calorie diet, and believe we have sufficient proof that in order to use this diet successfully, its fat content must be kept at a low level. Otherwise, more diabetics would require insulin and in those who do require it the dosages would be larger than at present. Since this diet was introduced, experimental data have also accumulated with respect to the influence of fat and carbohydrate upon carbohydrate tolerance. For purposes of brevity, the literature will not be reviewed. Suffice it to say that according to the consensus of data, it appears that fats depress, whereas carbohydrates improve carbohydrate tolerance. This, at least, fits in with our clinical experiences with the above-mentioned diet.

Since a greater allowance of meat would add to the attractiveness of this diet, it was considered important to determine whether the simple precaution of removing fat from meat and fish would permit these foods to be appreciably increased and still keep the fat content of the diet within permissible limits. There are very few analyses of meat free of all visible fat. Hanna (2), by carefully removing all visible fat tissue, found that the fat content of meat could be reduced to about 5 per cent. In this investigation, however, all visible fat tissue was *carefully* removed. The purpose of our study was to determine whether by removing visible fat, not with great care, but with that care which one might expect of pa-

[1] From the Department of Metabolism, The Montreal General Hospital, Montreal, Canada. Received for publication February 1, 1935.

tients in their homes, the fat content of meats and fish could be reduced sufficiently to permit a material increase in the amounts of these foods in the above-mentioned diet.

SELECTION OF MATERIAL

All samples of meat and fish were prepared by ordinary methods in the general kitchens of the hospital before they were sent to the metabolism laboratories for analysis. In the laboratory, the visible fat was removed with the same care to be expected of the patient with average intelligence, and no attempt was made to remove any fat which appeared to be ingrained in the meat; the removal was therefore gross.

The methods of preparation of the food included boiling, broiling and roasting; none of the samples was fried.

The meat was cut into small pieces and dried in a Freas oven to a constant weight at 110°C. Data were thus obtained with respect to water content. Protein content was determined by the standard Macro-Kjeldahl procedure and the factor 6.25 was used for the conversion of nitrogen to protein. Fat was determined by the standard ether extraction in the Soxhlet apparatus. Ash content was determined by ashing in a muffle furnace to a constant weight. The results of the analyses of various meats are shown in the accompanying table.

It will be observed that the fat contents of the meats, analyzed after only the visible fat is removed grossly, were very low compared with those reported for "edible portions" of meat "as purchased" or "roasted," "boiled" or "broiled." The values are such that instead of the usually small amounts of meat allowed with the high carbohydrate-low calorie diet, namely, about 45 grams at a meal, the diabetic may have a much larger and more attractive portion, as much as 3 to 4 ounces or even more. Such quantities add appreciably to the attractiveness of the diet. Incidentally, they supply protein of high biological value. Experiences to date indicate that if the potential sugar production of the increased quantities of meat is balanced by a reduction in the amounts of carbohydrate-containing foods, no disturbance is produced in the carbohydrate tolerance of the individual. As with past diets in which smaller quantities of meat were used, the number of diabetics who require insulin is lower now than with the older low carbohydrate-high fat diets. For those who do require insulin, the amounts remain small and it is also possible as before, in an appreciable number of cases, to reduce the dosages and in some cases discontinue its use entirely.

Analyses of the edible portion of cooked foods with the gross fat removed after cooking

FOOD	METHOD OF COOKING	NUMBER OF ANALYSES	RANGE AND AVERAGE VALUE	WATER (PER CENT)	PROTEIN (PER CENT)		FAT (PER CENT)	ASH (PER CENT)
					N × 6.25	By difference		
Beef	Roasted	8	Maximum	70.32	32.26	33.00	6.51	1.55
			Minimum	60.78	25.14	25.53	2.99	1.11
			Average	65.43	27.53	28.43	4.92	1.22
Beef (steak, fillet)	Broiled	4	Maximum	67.06	26.06	26.71	10.91	1.42
			Minimum	63.65	23.37	24.26	6.11	0.98
			Average	65.51	24.29	25.31	7.92	1.21
Beef (steak, sirloin)	Broiled	5	Maximum	64.36	32.39	32.68	6.79	1.90
			Minimum	60.19	27.92	28.38	3.54	1.18
			Average	63.24	29.53	30.29	5.10	1.37
Chicken (breast)	Roasted	4	Maximum	65.58	32.75	33.50	2.87	1.29
			Minimum	62.74	27.71	31.37	1.52	1.11
			Average	64.03	30.63	32.73	2.06	1.17
Chicken (thigh and leg)	Roasted	4	Maximum	63.47	28.50	30.47	10.91	1.22
			Minimum	60.02	26.72	27.42	5.96	1.00
			Average	61.66	27.71	28.85	8.40	1.08
Chicken (broiler)	Broiled	4	Maximum	72.60	25.67	25.56	5.74	1.18
			Minimum	67.58	22.60	22.69	1.66	0.96
			Average	71.02	23.79	24.14	3.76	1.07
Chicken (breast, young fowl)	Boiled	5	Maximum	67.19	31.78	32.16	2.67	1.00
			Minimum	64.30	29.71	30.96	1.47	0.87
			Average	65.81	30.68	31.41	2.07	0.92
Chicken (thigh and leg, young fowl)	Boiled	5	Maximum	63.51	30.97	32.54	9.82	0.93
			Minimum	57.87	24.59	27.33	5.08	0.81
			Average	61.57	27.68	30.12	7.43	0.88
Haddock	Steamed	2	Maximum	73.22	22.39	25.12	0.33	1.33
			Minimum	71.70	26.74	26.39	0.33	1.58
			Average	72.46	24.56	25.75	0.33	1.45
Halibut	Steamed	2	Maximum	73.80	22.58	22.99	1.83	1.38
			Minimum	71.07	25.69	25.59	1.71	1.63
			Average	72.43	24.13	24.29	1.77	1.50
Ham	Parboiled and baked	5	Maximum	63.21	30.17	30.73	7.11	5.30
			Minimum	60.44	24.95	28.38	2.48	4.07
			Average	61.98	27.99	29.57	3.84	4.61
Lamb chops	Broiled	5	Maximum	67.14	34.18	34.95	8.74	1.33
			Minimum	55.38	25.01	25.94	5.84	1.08
			Average	59.30	31.09	31.93	7.54	1.23
Lamb (spring, leg)	Roasted	5	Maximum	62.08	32.24	34.44	8.63	1.24
			Minimum	58.59	28.51	30.28	5.78	1.08
			Average	59.92	30.61	32.03	5.90	1.15
Pork loin	Roasted or broiled	5	Maximum	69.74	33.05	33.51	9.98	1.38
			Minimum	55.30	26.34	26.02	3.05	1.15
			Average	62.66	29.72	30.52	5.60	1.22
Turkey (breast)	Roasted	4	Maximum	64.76	32.32	34.65	3.12	1.25
			Minimum	61.10	30.48	31.25	1.50	1.13
			Average	63.56	31.76	32.95	2.31	1.18
Turkey (thigh and leg)	Roasted	4	Maximum	65.33	29.38	30.22	8.02	1.05
			Minimum	61.04	25.17	25.92	6.25	0.86
			Average	63.01	27.39	28.58	7.43	0.98
Veal (leg)	Roasted	5	Maximum	71.42	30.55	33.51	0.80	1.65
			Minimum	64.53	26.26	26.92	0.57	0.98
			Average	67.15	29.12	30.94	0.69	1.23

Incidentally, in the accompanying table are also recorded values for water, ash and protein of foods prepared as described.

The writers are indebted to Ruth Park, chief dietitian of the hospital, and Olive Snider, dietitian in charge of diabetics, for their coöperation.

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PROPER PROCESSES FOR HOME CANNERS[1]

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EFFORTS to conserve the world's food supply should be worthy of all support. Occasionally food surpluses become great problems, but generally it is desirable to have methods for conserving even the smallest amounts of food. An emergency, whether military or economic, is usually accompanied by efforts to save food.

The establishment of community canning centers throughout the United States is an important part of relief programs. In Illinois every attempt has been made to stimulate the unemployed to raise vegetables and preserve them by canning. The Federal Government, in 1934, canned large amounts of beef as part of its drought relief program. Fortunately, those engaged in supervising this work realized the factors involved and followed sound advice.

The art of canning, which has reached proportions in the United States greater than in any other nation in the world, had its origin in a great military emergency when Napoleon found it desirable to have more food with which to provision his large armies and to protect his sailors from deficiency diseases. Nicolas Appert (1) undertook investigations which form the foundations of the great canning industry. His method of food preservation consisted of four steps: (1) enclosing the substances to be preserved in a bottle or jar; (2) carefully closing the container; (3) heating in boiling water; and (4) removing from the water bath at the prescribed time. Thus Appert was among the first to recommend boiling water processes for non-acid foods. A large part of his success was probably due to the fact that he used only fresh foods, which in turn meant a low bacterial load to be killed by the process. He also packed small quantities, practically all of which were heated in some manner before being cooked in the closed container.

A satisfactory method of food preservation should yield a product safe for use when kept under ordinary methods of storage. If this requirement has been met, attention may be given to other characteristics, such as appearance, flavor and presence of accessory substances. The art of canning in the home, using certain methods now in vogue, does not come within the limits of a satisfactory method. For example, canned food technologists are agreed that the boiling water process for non-acid

[1] Read before the American Dietetic Association, October 17, 1934.

foods yields products which will not keep well and which may subject those who use them to serious health hazards. Results of bacteriological investigations and vital statistics for botulism prove this. Technologists believe that the boiling water process may be used for fruits and for a few products which are mid-way between non-acid vegetables and acid fruits, such as tomatoes. Boiling water processes for fruits are probably satisfactory if their hydrogen ion concentration has not been disturbed. Heat and acid are very destructive to living matter; the chemist uses these agents for breaking up organic matter by means of acid-hydrolysis. The same reaction is probably involved in destruction of bacteria by moist heat.

Consideration of the problems under discussion usually introduces many factors which may or may not be pertinent. The argument is presented that unless boiling water processes are used much food will be wasted, since pressure cookers are not always available. While in some cases it is true that people cannot afford to buy them, it is also probable that their value has not been sufficiently emphasized. Cruess and Christie (2), specifically state that if it is impossible to process vegetables in steam pressure cookers, some other method of preservation, such as dehydration or fermentation, should be used. The position seems tenable, therefore, that acres of foods might preferably rot in the fields than be canned by unsafe procedures and cause food poisoning. Where human lives are involved there are no half-way measures. The gross spoilage which frequently results in packs of home canned foods is further evidence that some methods should be abandoned, and drastic changes be made in others. Recommended processes must be materially lengthened but the end results will more than outweigh any additional labor and expense. It means that changes will have to be made in many publications and recommendations.

Examination of much of the literature for the home-maker reveals the difficulty of determining just what attitude is taken by some sponsors of methods of processing. It seems reasonable to assume that if a bulletin carries time-tables and instructions on any method of processing, that method is tacitly approved. Some who have published methods for processing vegetables in boiling water, now say that they do not recommend any particular method but that it was their purpose to give the best practices to be used by the home-maker. Such an argument is confusing in view of their published detailed instructions. The statement is sometimes made that procedures have been approved by a resident bacteriologist, if the writer is connected with a state experiment station.

Esty (3) has recently pointed out that canned foods technology is now a deeply technical field, in which to speak authoratively one must be in a position to consider all of the available knowledge. Furthermore, some experience seems to be necessary in any interpretation of results of bacteriological examination of canned foods.

In another paper (4), recommendations distributed by the various home economics extension services connected with our agricultural experiment stations were reviewed. Since then evidence has come to hand that ten such services (California, Florida, Maine, Nevada, New York, Illinois, North Dakota, Virginia, Washington and Texas) now recommend pressure-cooker sterilization of non-acid foods. Some thirty-five of the remaining services advise the boiling water process for vegetables. Some states in these groups will probably change their positions and it is certainly to be hoped that the list of those which advise pressure-cooking of vegetables will grow in numbers.

In a second paper (5), publications of newspaper food bureaus, manufacturers of equipment for home canners, and a few cook-books were reviewed. Many of these publications give sound advice while some do not. The fact that manufacturers of glass containers for use in home canning uniformly recommend the boiling water process, is noteworthy. Stove-manufacturers believe that oven canning is satisfactory for all foods, both acid and non-acid. Many newspaper food bureaus disseminate similar advice. The radio is now coming into the field and unless attention is called to the danger of unsafe processes, much harm may be done. It is also significant that many who distribute the publications just mentioned to home canners, are in direct opposition to the state extension service. Home economics extension advisors in the state may be recommending the steam pressure cooker for non-acid foods, while every case of jars which comes into the state may contain recommendations for the boiling water processes. It is no wonder that the average homemaker is confused when she consults a supposed authority and reads "the U. S. Department of Agriculture recommends the use of a pressure cooker for canning non-acid vegetables and meats," and learns that methods and time-tables for oven and boiling-water processing appear in the same publication.

In the meantime, what has been the situation for factory-canned foods? Serious outbreaks of botulism in the past caused factory canners to spend thousands of dollars to secure information on canning. Fortunately, the results of practically all of these investigations have been published in the literature and are available to all who will use them.

Those who are advising home-makers on home canning, need little new information. Results of but few investigations of home-canned foods have been published. Sunderlin, Nelson and Levine (6) reported the results of an extensive study designed "with a view to securing spoilage data and time tables for this method of canning vegetables and meats." "Process times found entirely satisfactory, under the conditions of the experiments, were 2½ hours for beans and chard, 3 hours for beef and pork, and 20 minutes for tomatoes." Adequate methods for studying the condition of their jars with regard to anaerobic spore-forming and thermophilic bacteria, spoilage organisms *par excellence* in canned foods, were not sought for. When their jars of beans were incubated at 37°C., 66 per cent spoilage resulted; when incubated at 55°C., the spoilage was 100 per cent. Process times and temperatures which allow such spoilage can hardly be accepted as satisfactory. Since there had been no botulism in Iowa, the possibility of food-poisoning by *Clostridium botulinum* was not investigated. However, when they examined their jars they purposely omitted tasting for they believed it to be unwise to test canned foods for spoilage by actually bringing them into contact with the mucous membranes of the mouth.

Many papers have been published to furnish a firm foundation for methods to be used in canning foods in the home. Little if any work is needed on the bacteriological phases of the problem, but some investigation may be needed on containers and closures applied to them. It is obvious from the literature that home canning recommendations have been based on practically no experimental work. Recommendations have apparently grown from general procedures developed before much, if anything, was known about heat resistance of bacteria and penetration of heat into food containers. That all factory canning procedures should be introduced into the home is not argued. It is believed, however, that methods should be carried out in accordance with sound practice which, in turn, must consider all bacteriological knowledge. Dietitians should be among the first to support such an effort. Those interested in factory processes may consult Bulletin 26 L Revised (7) of the National Canners' Association.

The art of canning in the home received great impetus during the World War. *Farmers' Bulletin 359*, issued in 1909, advised a five-hour process in boiling water or intermittent processing for vegetables. *Farmers' Bulletin 839*, issued in 1918, stressed that, although it was generally inadvisable to can vegetables and meats in the home, the procedure advised in the bulletin made it possible to can such foods with safety.

About this time, increasing prevalence of botulism stimulated Dickson (8) to test the validity of this statement with *Clostridium botulinum*. He processed peas, corn and beans after inoculation in boiling water. After three weeks all were spoiled and guinea pigs were killed by the contents of the jars. Dickson then pointed out that the cold-pack process was unsafe and should not be used. The United States Department of Agriculture denied Dickson's statements, in spite of the fact that outbreaks of botulism caused by "cold-packed" foods were increasing in number. Their defense relied mainly on the statements in text-books that the spores of *Clostridium botulinum* were destroyed by heating at 175°F. for one hour, even though much greater resistance had already been reported. Burke (9), for instance, showed that spores of some strains of *Clostridium botulinum* would survive 212° for three hours. Dickson (10) then called attention to the potential danger in improperly canned foods, whether packed in the home or in the factory.

Numerous outbreaks of botulism continued and evidence collected by extensive investigations in the Department of Agriculture prompted the issuance of *Farmers' Bulletin 1471* in May 1926. In this bulletin the steam-pressure cooker was recommended for vegetables. Since then, this bulletin has consistently given adequate advice with but one exception: in case of doubt or for special instructions, consultation with the state extension service is advised. This is sound advice if the state happens to be one of those which has faced all of the facts and recommends steam-pressure cookers for non-acid foods. Furthermore, Dr. A. F. Woods, then director of research of the Department of Agriculture, placed the department officially on record as opposed to the boiling water process for vegetables. The American Public Health Association at its 1934 meeting passed the following resolution:

> Whereas, The inadequate processing of foods in the home presents certain dangers to health,
>
> Therefore be it resolved: That those who distribute literature on home canning advise the use of the pressure cooker for non-acid foods; and that in the preparation of all such literature full consideration be given to bacteriological and chemical knowledge on the art of canning, so that the home maker may be given safe counsel on methods of home canning and may recognize the hazards of home-canned foods inadequately processed in the oven and in boiling water.

The history of botulism in the United States since 1914 is one involving canned foods. Since 1925 no botulism has been caused in this country by factory-canned foods. Meyer (11) reported a total of 193 outbreaks

between 1899 and April, 1931, 131 or 68 per cent of which were caused by foods preserved in the home, in most cases home-canned vegetables.

There are some who believe that the factory canner and home canner must necessarily be opposed to one another. Such a position is quite untenable for each has interests which do not conflict to any extent. Although considerable amounts of foods are canned in larger communities, the bulk of home canning takes place on the farm where there is an abundance of raw materials at little or no cost. Cost of fuel is often negligible and about the only expensive item is the labor. The factory canner, however, buys practically everything involved, from raw materials to labor. Consequently he has given more attention to cost and spoilage problems than has the home-maker. The latter should be encouraged to pay more attention to the extent of spoilage in her canned foods, since the labor and energy put into canning perishables is considerable. It is from the standpoint of health hazards that factory canners take issue with unsound advice to home canners. Outbreaks of food poisoning attributed in newspapers to canned foods reflect on the whole industry, with a consequent loss of goodwill, despite the fact that experience during the last ten years has shown home-canned foods to have caused practically all of the outbreaks.

The establishment of community canning centers may introduce further cause for trouble unless under competent leadership. Only those who appreciate the hazards of careless procedures should be allowed to supervise these projects. All vegetables should be cooked under steam-pressure according to time tables published in reliable bulletins such as *Farmers' Bulletin 1471*. Stienbarger and Birdseye (12) have prepared a useful outline of required procedures. The canning center, according to some technologists, might be a feasible way of solving the difficulties which now surround the home canner. They believe that the average home-maker will never appreciate the factors which are involved in canning a safe product and that the canning center, conducted by a competent leader, is the best solution.

The type of container, whether it be a tin or glass, is not of great consequence since each has its advantages. The tin container for home-canned foods has been making distinct advances since the development of hand-closing machines which execute a satisfactory double seam. The tin container has the advantage of being more rugged and will endure more satisfactorily the conditions known to be necessary for proper processing. The glass container, on the other hand, makes it possible for the home maker to see the food, while public exhibitions of home-canned

foods in glass are much more interesting than those in which opaque containers are used. However, proper processing in glass is more difficult, loss from breakage is greater, and penetration of heat is much slower than in tin.

Three general methods of processing are advised in the various publications on home canning: in the oven regulated to either 250°F. or 275°F.; in boiling water at 212°F.; and in the steam-pressure cooker. Just how these methods were developed and applied to home canning is difficult to determine. Practically no bacteriological work seems to have been related to these methods. Apparently, procedures adopted by pioneers in the field have been carried along since by various authors. Some of the methods seem to have assumed a position like that of the Laws of Moses and those who presume to question their validity are considered a nuisance. However, sufficient bacteriological data are now in the literature to justify critical consideration of these methods. One manufacturer of glass jars advises placing the jars in a cold oven and lighting the oven with the regulator set at 250°F. The time is computed from the moment the fire is lighted. Another guide for home canners, *The Ball Blue Book*, recommends an oven temperature of 275°F., advises preheating the oven and counting process time when the required temperature is reached. These recommendations from two widely distributed books show wide variation and indicate a lack of information on just what times and temperatures should be used. Some foods which permit slowest penetration of heat are given shorter processes than others which allow heat to enter more rapidly.

Oven processing is both wasteful and dangerous; it will not yield canned foods which keep when stored under the usual conditions. The temperature attained in the jar does not rise above 212°F., since the jar is not sealed. Sealing, of course, would cause many of them to burst. The "coming-up" time for a quart jar of vegetables in the oven would be very slow (13). A jar of water with an initial temperature of 68°F., processed in an oven regulated at 275°F., required from 95 to 110 minutes to reach 212°F. This means that about two-thirds of the process time advised for processing some foods in the oven has been used up before the temperature of the jar has reached the maximum which it may attain. When the initial temperature was 158°F. the "coming-up" time was from 50 to 55 minutes. With others foods, such as solidly packed greens, the "coming-up" time would be very much longer. In processing corn in the oven, 90 of the total 240 minutes advised were required to reach 188°F. (Fig. 1). This means that the jar of corn would not be

processed for very long at 212°F., if at all. Such curves should be studied by all who are interested in home canning. Similar curves for peas were published by Tanner (5).

In order to secure actual information on the oven method of processing vegetables, fresh carrots, beets, cabbage, spinach, asparagus, sweet potatoes, peas, and green beans were canned according to the instructions in one of the prominent guide books on home canning. A total of 187 jars were canned, 150 of which were inoculated with detoxified spores of *Clostridium botulinum*; thirty-three were used as controls without inocu-

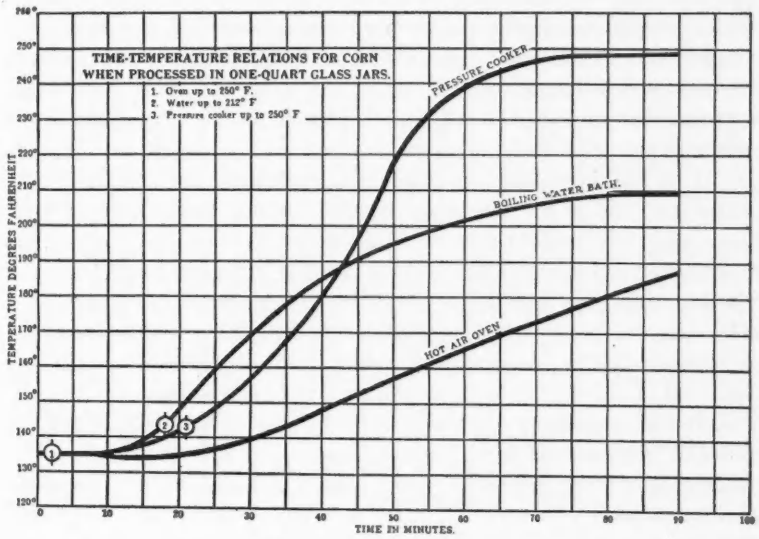
TIME-TEMPERATURE RELATIONS FOR CORN
WHEN PROCESSED IN ONE-QUART GLASS JARS.
1. Oven up to 250° F.
2. Water up to 212° F
3. Pressure cooker up to 250° F
PRESSURE COOKER
BOILING WATER BATH.
HOT AIR OVEN
TEMPERATURE DEGREES FAHRENHEIT
TIME IN MINUTES.

FIG. 1

lation. All of the jars were processed in an oven regulated at 275°F. In the belief that the recommended process periods of 2½ to 3 hours might not be sufficient to destroy organisms, the jars were heated for 5 hours. This failed to destroy spores of *Clostridium botulinum*, for all of the foods became toxic on storage.

The steam pressure cooker is the only acceptable method for processing non-acid foods. No other method should be recommended, according to data collected by bacteriologists on heat resistance studies of spores of *Clostridium botulinum* and spoilage bacteria. The National Canners Association, after about 20 years of intensive study, published

approved process times and temperatures for non-acid foods in different sized containers. Mere adoption of the steam-pressure cooker may not reduce spoilage unless it is properly constructed and properly operated. It should have a thermometer as well as a pressure gauge. A pressure gauge with temperature markings is not sufficient. Separate instruments are necessary in order that the operator may check pressure and temperature. Only in this manner is it possible to make certain that all air has been forced out and that the atmosphere in the cooker is pure steam. Tanner (5) has shown the effect on temperature within the pressure cooker of various amounts of air. Pressure cookers are available with capacities ranging from six or seven quart jars to a few dozen.

The success attained in processing both factory-canned and home-canned foods is largely determined by the temperature attained at the center of the jar. Unless sufficient heat enters to destroy bacteria the food will not be sterile. In order to determine the relative rate of penetration of heat into glass jars of food processed in the oven, in the boiling water bath and in the pressure cooker, the curves shown in Fig. 1 were prepared. Cream-style corn was packed in standard quart glass jars in which a thermocouple was inserted through the cover to the center of the jar. The jars were then placed in their respective heating units. The corn was preheated to approximately 140°F. The thermocouples were connected to electrical equipment. Each of the heating units was operated in accordance with instructions for home-makers. The pressure cooker was operated, however, at 15 pounds instead of 10 to 15 pounds. Processes in hot air ovens, operated at 250°F. were shown to have a lower sterilizing value than boiling water processes. This is due to the relatively slow rate of heating in hot air and to the fact that the temperature in the jar does not rise above 212°F. The boiling water processes of 180 minutes or oven processes of 180 to 240 minutes, recommended in some well-known home canning books, will obtain only from 10 to 16 per cent of the sterilizing value of suitable pressure processes.

The question may now be asked: Must home-canned foods be sterile? Understerilization is the danger which canners fear, although it must not be inferred that all canned foods which contain viable bacteria will spoil. The question may be answered by stating that spores of *Clostridium botulinum* should be destroyed and procedures should be used which will insure this. Other spoilage is the individual's problem; home canners may perhaps accept much larger percentages of spoilage than factory canners. Botulism outbreaks have caused health officials

in some states to specify processes. The cannery inspection service as described by Meyer (11) should interest every dietitian and extension specialist. He has shown that factory-canned foods in California are as near perfection as they can be made with present knowledge.

Advisors to home canners have realized the potential danger in home-canned foods, for they usually advise that such foods be boiled for 10 minutes before use, and that no food from a container which shows evidences of spoilage or which has an "off odor or appearance" be served. Despite these warnings, as Geiger, Dickson and Meyer (14) pointed out, that majority of botulism outbreaks have been caused by foods which were known to have had evidences of spoilage. Yet we frequently hear the statement that frank evidences of spoilage would cause a food to be discarded. Unfortunately, such is not always the case. Instead of relying on heating of a food which admittedly may otherwise be unsafe, more attention should be given to the method by which it was preserved. The logical procedure is to make undesired results impossible.

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PRACTICAL DIETARY STUDIES CONDUCTED BY COLLEGE STUDENTS IN NUTRITION[1]

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FOR the past four years, students majoring in foods and nutrition at Battle Creek College have carried out dietary studies either upon themselves or more recently upon families who were receiving federal relief. The accumulation of these data and the subsequent calculations formed the basis for several laboratory periods and much profitable discussion.

First it was necessary for students to learn to weigh and measure foods accurately, to simplify their procedures and to record observations systematically. Discussion and practice in these phases of the work constituted an introductory lesson.

During the fall seasons of 1932 and 1933, students made dietary studies on themselves, weighing their food accurately for a week. It seemed desirable for each student to analyze the nutritive adequacy of her own diet, as chosen freely. About half of the students were eating in the college dining room where three meals a day, of which two were served cafeteria style, offered a wide range of choice on a non-meat regime. The other half lived in the city or worked for room and board where the range of food selection was exceedingly variable.

Continual supervision was necessary during this week of food weighing in order to make sure that all necessary data were recorded, including recipes and methods of food preparation. Those eating in the college dining room consulted the dietitian, for such information, but those living in private homes had to obtain it as best they could. The inaccuracies which were sure to creep in at such points were discussed freely by the class and recognized, not disregarded. Most college women, today, are notoriously weak in their knowledge and use of decimals and fractions, to say nothing of simple multiplication and division. The dietitian in any institution, on the other hand, must be able to handle figures easily and accurately. As a student she needs extensive practice in calculations of food values, costs etc.; but she needs the incentive of interest as well, because mathematical calculations are a phase of her training which is usually considered a bore.

Calculations were all made from standard food tables such as the

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U. S. Department of Agriculture bulletins 28, 50 and 146; Bradley, *Food Tables*; Rose, *Laboratory Manual*; Sherman, *Chemistry of Food and Nutrition*, and Cooper, Barber and Mitchell, *Nutrition in Health and Disease*. The discrepancies noted in the figures of mineral content or calorie values for certain foods, as given in these different sources, served to re-emphasize the lack of accuracy in available food composition tables and the need for further work along these lines. The figures which seemed most reasonable were selected and used consistently by the entire class.

Much of the calculation had to be done outside of the laboratory, followed by a discussion of results each week. Various difficulties arose which served to challenge ingenuity. Some tables are expressed in per cent, some in mg. per 100 gms., some in parts per million. It was necessary for students to familiarize themselves with the relative values and be able to recalculate promptly. Common sense as well as mathematics is needed in doing calculations and in judging the reasonableness of the answers obtained.

The carbohydrate, fat, protein, total calories, Ca, P, Fe, and fiber of each student's diet were calculated and the composite class results were discussed in connection with the lecture and laboratory lessons on these respective subjects. While results cannot be considered accurate, a few of the figures seem sufficiently significant to warrant recording in tabular form.

There were 23 students in the 1932 class and 18 in the 1933. The protein intake was adequate for all members of the class even when the calorie intake seemed extremely low, and the protein intake of those on a non-meat regime in the college dining room was slightly above that of those living outside and eating meat more or less frequently.

The rather large proportion of students who showed an inadequate consumption of calcium, phosphorus and iron in their dietaries, made a strong impression upon the group. Thus interest was naturally centered upon the foods which were rich in these elements and the reasons why their customary choice of foods had not furnished the minerals in sufficient amount. Those who showed a low calcium or phosphorus intake were invariably those who refused to drink milk regularly and in many cases disliked either cheese or eggs, and sometimes both these foods. The low iron intake correlated with a dislike of vegetables, particularly. It was significant that the group on a non-meat regime showed a higher iron intake than the group eating outside the dining room.

While it is quite impossible to draw conclusions from, or place much

confidence in these results obtained by inexperienced undergraduates, nevertheless the general indications are interesting.

During the Fall of 1934, the class of 23 members has been conducting dietary studies upon families chosen from the relief rolls by FERA case workers. The student made the first visit to the family, accompanied by the case worker in that district. The plan of the four weeks' dietary

Summary of student dietary studies on themselves

	PROTEIN INTAKE, GRAMS PER KILO PER DAY			COMPARISON WITH STANDARD REQUIREMENTS .67 GM. PER KILO PER DAY
	Min.	Max.	Av.	
1932	.64	1.5	1.0	Adequate for all
1933	.64	1.1	.87	Adequate for all
	CALCIUM INTAKE, GRAMS PER DAY			COMPARISON WITH STANDARD REQUIREMENTS .68 GM. PER DAY
	Min.	Max.	Av.	
1932	.5	1.43	.86	16 adequate, 7 low
1933	.43	1.33	.76	11 adequate, 7 low
	PHOSPHORUS INTAKE, GRAMS PER DAY			COMPARISON WITH STANDARD REQUIREMENTS 1.32 GM. PER DAY
	Min.	Max.	Av.	
1932	.6	1.7	.98	18 adequate, 5 low
1933	.32	1.46	.92	11 adequate, 7 low
	IRON INTAKE, GRAMS PER DAY			COMPARISON WITH STANDARD REQUIREMENTS 15 MG. PER DAY
	Min.	Max.	Av.	
1932	5	25	14	17 adequate, 6 low
1933	3	18	10	4 adequate, 14 low
	FIBER INTAKE, MILLIGRAMS PER KILO PER DAY			COMPARISON WITH STANDARD REQUIREMENTS 90 MG. PER KILO PER DAY
	Min.	Max.	Av.	
1932	40	179	105	
1933	34	187	90	8 adequate, 10 low

or food consumption study was explained to the family and their co-operation and interest solicited. In the few cases where some member of the family seemed dubious about allowing the students to assist or did not wish to give them the desired information, the matter was dropped and another family chosen. As far as possible the families were made to feel that they were peculiarly able to offer us information which we could not easily obtain elsewhere and that after the study had

been made they might profit by the information, if they so desired. Very little difficulty or lack of coöperation was encountered when this plan was followed.

The dietary calculations were made according to the plan and outline furnished in the recent article by Okey and Luck (1). A three or four weeks' period was studied with one group of families and a two weeks' period with a second group. Students made an initial inventory of food on hand, kept a record of all food purchased during the period and then made a final inventory. In most such families there were very few supplies left over from week to week, thus making the matter of inventories exceedingly simple.

The initial inventory figures, plus all food purchased minus the final inventory, gave the total food consumption. The Okey and Luck method is so clearly described that it is entirely suitable for student use. The ease with which the class handled the project and the keen interest in the results of their calculations were most encouraging. The necessary mathematical problems were accomplished with accuracy and precision, and a critical attitude taken toward the results obtained.

When the project was started it was quite uncertain whether the results would be sufficiently significant to discuss. The limited number of families and the inexperience of student observers were recognized handicaps. However, the wide variety of families chosen affords some interesting extremes for comparison. Those families receiving direct relief in the form of a food voucher plus milk tickets proved to have adequate calories, protein and minerals, but were notably low in vitamins A and C. The families on work relief who received no milk tickets failed to buy enough milk and showed a strikingly inadequate supply of calcium and phosphorus, as well as vitamins. Calories and protein were adequate in nearly all families; the minerals, calcium, phosphorus and iron, and vitamin A were adequate in four out of twelve, but vitamin C was strikingly low in all families due to the scarcity of fresh fruits and vegetables.

Peculiar dietary habits of families or poor planning were noted in several cases. One family purchased and used two and one-half quarts of mayonnaise in four weeks but almost no butter; one had a variety of game meat and mushrooms provided by two good hunters in the family; another refused to buy cabbage or carrots because the children would eat them raw, but not cooked; while others spent unwarranted amounts of the limited vouchers for pickles, vinegar, jello, coffee and cookies.

The results of this preliminary study suggest that the plan is quite feasible as a student project and should yield valuable information for the local relief agencies. The results of this survey were presented to the local case workers with practical suggestions for each family and some generalizations which applied to all. The present class is desirous of continuing the study on a larger number of families. The sociological experience afforded by such a study is no small part of its value. Perhaps the most profitable result of either the personal or family dietary study, however, is the experience which it gives the student and the stimulus which it offers toward further research.

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EDITORIAL

On to Cleveland!

Of course, you're coming to Cleveland for *the* convention the last week of October. There are good railroad connections, fine highways and quick service by plane. Earlier in the year, you could come by boat, but at this time of the year, it is impossible unless you come by freight! The walking is good, however, all the year around.

The American Dietetic Association, which has grown in such a flourishing way in the last few years, now demands the accommodations which only a big city can supply. At the Cleveland Hotel which connects with the railway terminal, you will find comfortable rooms in which to spend those few minutes you devote to sleep. The meeting rooms are guaranteed to be airy, so that you will have no excuse for taking that much needed nap during the speeches. The program, by the way, is planned particularly with the idea of keeping you awake—wide-awake. Mary Louise Bone, the chairman of the program committee, and her associates have already lined up speakers of national prominence.

You will have the opportunity of visiting some of the finest hospital units in the world, where dietetic equipment is outstanding. The colleges and schools will welcome your visits. For your spare time, if any, the library and museums and the concerts by Cleveland's own fine orchestra will tempt you. The beautiful new music hall is one of the finest in the world. Cleveland also offers excellent theatrical performances at the only self-supporting repertoire theatre in the world!

Marie Hines of the University Hospitals which comprise the large new medical center, and her committee are planning to show you that famous mid-west hospitality has not been over-rated. You will find the first evidence at the opening Sunday afternoon tea. Of course, you're coming to the Cleveland meeting. You can't afford to miss it!

A Critique On Diet and Dental Caries

The many readers of this Journal who have cavities developing in their teeth at more or less frequent intervals will be interested in the article on dental caries that appeared in the March 1935 issue. The authors deserve much credit for their pioneer observations on the possible

relation of diet to susceptibility to dental caries and on the effectiveness of a well-controlled diabetic diet in arresting the progress of tooth decay in diabetics. However, attention should be called to certain fallacies in their argument and omissions in their presentation.

Drain and Boyd dismiss rather summarily the theory that a primary cause of caries is the growth of colonies of lactobacilli in protected areas of tooth surface. The argument that the widespread use in this country of "tooth brushes, dentifrices, and mouth washes" has not lessened the incidence of caries means little. Visible mouth cleanliness does not insure absence from the mouth of certain specific types of bacteria. Neither can it be assumed that visibly dirty mouths will always harbor them. No reference is made to the most recent publications, giving evidence, unrefuted to date, that dental caries is primarily of bacterial origin.

In this paper referred to the definite impression is given that experimental work with animals confirms the theory that caries is caused by consumption of diets that are deficient nutritionally. The only such experiments that have given consistently uniform results have been on rats. The controlling factor has been the physical consistency of the cereal component of the diet, not nutritional adequacy. Drain and Boyd quote observations made in 1930 by Bunting in support of their belief in the efficacy of a well-balanced diet in arresting the progress of tooth decay. No mention is made of more recent publications by Bunting and his associates, refuting these earlier observations. These later publications support the belief that the way diet affects the local environment of the teeth in the mouth is of greater primary importance in the control of caries than the diet's nutritional value.

The majority of those interested in the cause of tooth decay will applaud the authors for concentrating their "efforts on the improving of the general health of the child." Such interests are not served, however, by making too optimistic claims for the success of a method of dietary control. The preponderance of evidence shows that no diet regime, practical in its application, has yet been reported that is completely effective in arresting tooth decay. Then, too, we all know persons free of tooth decay, whose diets are quite unsatisfactory nutritionally. Perhaps many of the discrepancies in the authors' results are traceable to their method of diagnosis of arrested caries. No other workers in the field have been willing to report caries as arrested after only eight weeks' observation. Once the real relation between diet and the cause of dental caries is known, the principle involved can be applied to well-balanced

diets, thereby contributing to the general health as well as to the dental health of children and adults.

Nutrition, Then and Now

The science of nutrition, once the "step-child of medicine," has profited by the reversal of feeling due to epoch-making discoveries in this science in recent years.[1] Whereas once, in planning the patient's diet, physicians thought solely in terms of the local pathological condition, of the harm they might do some impaired organ, they now, according to McLester, think in terms of general physiology—of the needs of the human body as a whole. An early advocate of this principle among dietitians was Dr. Ruth Wheeler, whose views have been well reflected by one of her students.[2]

Foreshadowed twenty-five years ago by the complete about face in the treatment of typhoid, we see further changes in attitude with regard to the treatment of gastric ulcer. Not only must the diet here have a direct influence on the stomach; it must keep the patient in nutritive equilibrium, and promote repair. Another grievous error of the past, the dietary limitations in Bright's disease—"the sparing of the kidney"—has been rectified by a modern view, which takes cognizance of the fact that food proteins used for replacement purposes are not degraded to their end products and therefore do not increase the burden on the kidneys. Further than this, protein loss plus protein starvation means depletion of body protein, and eventually a state of chronic inanition which in turn retards all recovery. The work of Epstein, Van Slyke and McCann attests the truth of these observations. Again, in the same category, was the patient with vascular hypertension who could "eat no meat, no eggs."

Even more recent is the change that has come about in the viewpoint on the nutritive needs of the diabetic. Once this disease was looked upon as merely a failure of carbohydrate utilization. Now we know that the needs of the body as a complete unit, "not merely a single metabolic fault," must be considered.

Once, in the treatment of tuberculosis, a condition of obesity or near obesity was the hopeful aim. Now it is the diet that will keep the patient in a "state of nutritive equilibrium" and approximately at his ideal weight, that encourages recovery. A seemingly endless variety of

[1] J. A. M. A. 103:383-84, Aug. 11, 1934.

[2] Food in Health and Disease, by Katherine Mitchell Thoma, p. 6. Published by F. A. Davis Co., Philadelphia, 1933.

dietary restrictions used to be the *summum bonum* in the treatment of chronic arthritis. Proteins, fruits and tomatoes, and sugars and starches were forbidden. Now, McLester believes that there is no satisfactory clinical evidence to show that such restrictions, even of carbohydrate, influence the course of arthritis. Here again the trend is away from one-sided diets and toward a ration that carries all nutritive essentials—even when reduction in body weight is desired.

The present-day diet of infants and children is but another of the many evidences of changing trends. As McLester says, further changes may extend into the obstetric practice of the future. The restricting of the protein quota as a safeguard against eclampsia, the restricting of food to limit the size of offspring, may be some of our present errors. Here, again, is needed a diet abundantly supplied with all essential food factors. These changing concepts do not indicate undue vacillation; they reflect the broader understanding that has come with the discoveries of recent years, the results of this applied knowledge, and the support of careful clinical observation. It is thus that we progress.

Nutrition and Dietetics in the United States[1]

In the United States, as nowhere else in the world, are the daily lives of so many people favorably affected by a widespread educational program relating to the wise use of food. The science of nutrition and its immediately practical application, dietetics, are concerned with the requirements of human beings for maintenance, growth, activity, reproduction and lactation. Nutrition as a science has grown within the lifetime of a man still living, Russell H. Chittenden, from a subject without enough standing to warrant a laboratory or research, to a status where there is hardly a university that does not have on its staff one or more competent investigators and facilities for some lines of research in this field.

As in the latter half of the nineteenth century, when biochemistry developed its own techniques for the interpretation of the fundamental processes of life along broad scientific lines, and emerged as a specialized field of knowledge and research, so in the twentieth century nutrition has established its own identity, apart from the general field of biochemistry. Fostered by the brilliant work of Lavoisier, Liebig and others during the latter half of the nineteenth century, the science of nutrition finally took a definite place among the other sciences with the discovery of the distinctive functions of the proteins and mineral elements, the discovery

[1] Summary of paper by Mary S. Rose, Nutrition Abstr. and Rev. 4:439–46, Jan., 1935.

of the vitamins, and the present day methods of investigating nutritional phenomena.

Other circumstances have aided the advancement of nutrition in this country. One of these is the rise of the land grant colleges, the other the development of the technical and professional training of women. Due chiefly to the educational work of Emma Willard, whose "Plan for Improving Female Education" was published in 1819, and Catherine E. Beecher, who wrote a treatise on domestic economy for the use of "young ladies" in 1841, schools of home economics were begun in the United States. In 1870 the doors of the land grant colleges were opened to women, with the agricultural colleges of Iowa, Kansas, and Illinois leading the way, and in 1874 the last had formulated her curriculum in household science, in which chemistry and physiology were recognized as fundamental subjects. Courses in "food and dietetics" were given a prominent place. In 1888, W. O. Atwater, deeply interested in the application of science to problems of human nutrition, assisted by E. B. Rosa, prepared the first respiration calorimeter in this country, and later on, with his co-workers, furnished the first extensive report on the composition of American food materials. These reports, including Bulletin 28, the dietetic bible, became both law and gospel in the new departments of home economics.

Sherman's *Chemistry of Food and Nutrition*, published in 1911, was the first satisfactory textbook available on nutrition. While laboratories of physiological chemistry and agricultural experiment stations were contributing to researches which were to lead to the development of a true science of nutrition, a leader appeared in the person of Ellen H. Richards. Mrs. Richards forsook astronomy for chemistry and successfully "stormed the doors of the Massachusetts Institute of Technology" as the first woman admitted for technical training. From this base she went forth as a missionary of science in the field of nutrition. She prepared the first popular bulletin of nutrition issued by the Department of Agriculture and organized a group of carefully chosen leaders in the field into the Lake Placid Conference, which functioned from 1899 to 1909.

The West led in home economics work in the coeducational college. In the East, another type of movement contributed to home economics development—cooking schools and kitchen gardens afforded young and old opportunity to learn better food practices. A kitchen garden, organized in 1878 in New York City, engaged the interest of a young woman, Grace H. Dodge. Under her enthusiastic leadership one kitchen garden led to another, and finally to an association whose first president was

Nicholas Murray Butler, then a young tutor of philosophy. This organization, within a year, formed the New York College for the Training of Teachers in 1887. Five years later the name was changed to Teachers College and it became part of Columbia University. In 1909 the new School of Household Arts was organized, with a special department of nutrition under Henry C. Sherman. Professor Sherman's laboratory became, and continues to be, a Mecca not only for men interested in analytical and food chemistry, but also for women who wish a thorough training in chemistry as it relates to nutrition. At the present time, 37 women have received the doctor's degree under Dr. Sherman's guidance.

Another powerful influence in the teaching of nutrition has been that of Lafayette B. Mendel, the most eminent of Chittenden's pupils, who has maintained the prestige of Yale in the field of physiological chemistry.

Today physiological, as well as general and organic, chemistry is required in most colleges of the United States for students taking a major course in foods and nutrition. Columbia University candidates for the Ph.D. degree, interested in nutrition, until very recently specialized in chemistry; they may now pursue, if they prefer, a combined program of chemistry, physiology and nutrition under the professors of nutrition of Teachers College. In 1932 Columbia granted its first Ph.D. degree in nutrition, the first school to offer the degree in this newer science.

The realm of applied dietetics received its initial impetus in the hospital field. With the founding of the American Dietetic Association in 1917, professional standards have been developed and maintained in this specialized field. In 1931, 161 colleges and universities were offering courses for the training of dietitians. Graduates, upon completion of courses of about a year, are then eligible for hospital positions. The competent dietitian may come to hold a position of great responsibility. Since food is the largest single item in a hospital budget, in the larger hospitals the budget for the food department alone may be in the neighborhood of half a million dollars yearly. One dietitian whose budget is of this magnitude, serves about 5000 meals a day, spends nearly $300,000 yearly for food alone, and has a staff of 16 dietitians. Some of her staff serve in the outpatient nutrition clinic in which upwards of 1000 persons in a single month receive instruction with regard to their diet.

Students interested in the social aspects of nutrition may serve an apprenticeship designed to fit them for outpatient clinics, infant welfare stations, and follow-up work in homes.

Applied dietetics in public schools came to the front in 1917 when a

special course for the training of nutritionists was offered at the University of Chicago. A survey in 1932 showed 273 nutritionists, exclusive of those in schools, institutions for child care, commercial firms or on the staffs of magazines and daily papers.

Other work in nutrition and dietetics is carried on by extension services of land grant colleges. In connection with these, home demonstration agents have promoted preschool clinics, hot school lunches, and other methods of modern health education. In cities a similar type of work is carried on by the nutritionists attached to the staff of welfare organizations.

The Federal Emergency Relief Administration in 1933 gave further momentum to nutrition work by requesting the help of food and nutrition specialists.

The science of nutrition has immediate application in daily life. "The conquest, one by one, of scourges like scurvy, rickets and beriberi, dramatic as each has been, is not so significant for the human race as a whole, as is the acquirement of knowledge which will improve the health of every man." To apply nutritional knowledge, due consideration must be given to psychological, economic and other factors in a given situation. "Progress in the science and skill in its application must go hand in hand." Therefore, while the school must train research workers, it must also give the worker who goes into the field the means for a valid and effective interpretation of the science in daily life.

CURRENT COMMENT

"The Shine on Your Cake"[1]

With all due respect to the best cooks of the small scale "come-right-this-minute" school of cookery, it must be acknowledged that the top-notch professionals, surrounded by sauces, syrups, mechanical gadgets and excited assistants are supreme in a field of their own. Although many chef's specials could never be successfully domesticated, a trip through the kitchens of a first-class hotel would reveal many helpful tips on equipment, cookery and trimming.

In one of New York's largest hotels, "the kitchen" consists of rows of

[1] Based on article by Ruth Chandler Moore and Marie L. Casteen in *Collier's*, December 1, 1934.

Note: Miss Casteen will be remembered as one of the heroines of the Association's New York meeting in 1932, who was largely responsible for the superlative quality of the meals served to members of the Association at the Hotel Pennsylvania.

kitchens, each separated from the next and staffed by its own specialists. Down one side of the block-long oblong, run the pastry kitchen, vegetable kitchen, salad pantry, ice-cream room, cold meat and hors d'oeuvre buffet, each opening into the wide central corridor where the waiters pass back and forth. Along the other side are the meat-cooking centers, also opening into the waiters' corridor, and also divided into separate sections labeled "Fry Cook," "Roast Cook," "Fish Cook," "Broiler."

Equipment is of two kinds—the chef's own tools and the big quantity production machines. Among the latter there is an intelligent-looking machine that is fed pie dough through a hopper and, as the crank turns, a succession of completely shaped pie crusts, exactly the right circumference and thickness to line the hotel pie tins, are shot forth. More practical for domestic use would be the razor-sharp rotary can-opener that turns back the edges of the can as it cuts, and the coconut grating machine that will grate anything it is fed.

Except for his large quantity tasks, however, the chef's equipment is fairly simple and old-fashioned, for, as an artist, he relies principally on his well-trained hands and a few time-honored tools. He still works on a marble slab and so saves innumerable bowls and much confusion. After each operation, the smooth surface of the slab is wiped clean, ready for its next use. Continuation of another tradition is the use of the pestle and mortar for the mashing of nuts and raisins, the working of smooth pastes for mousses and soufflés, and the making of fine fillings for sandwiches.

The chef's strainers are other important pieces of his equipment, and everything which can be, is strained. For heavy straining, a utensil called a China cap, a pierced metal cornucopia that fits firmly into the bowl or saucepan, is used. The food is pressed through with a wooden masher. For soft straining, the substance is poured into clean cheesecloth and squeezed through by twisting the ends. The chief stock in trade, however, is the chef's set of French knives—wide, triangular blades of varying size but invariable sharpness. The speed and accuracy with which these can be wielded puts even the machine to shame.

As to the shine on the cakes, pastries and baked apples, this is revealed as melted apricot jelly brushed over the top as the tarts or apples come out of the oven. Among the other shines, a standard egg-wash is used to glaze pie crusts before making. The shiny icings on cakes and éclairs have as their foundation a ready-made moist white sugar fondant. The cake is put on a cake rack over the marble slab, and the frosting poured over it. In the cold meat section, the glazes are a good thin

coating of cold jellied consommé, more transparent than usual and made with more gelatin to make it stick.

Other aids to hotel polish are the garnishes. Every chef is equipped with his own last minute fixings. The fish and meat chefs have lemon juice, melted butter, bowls of buttered crumbs, truffles, mushrooms, parsley and cress among their garnishes. And with glaze and garnish artfully used, can come the hotel look to home (or hospital) food.

Findings of Food Committee on Home Stabilization Organizations[1]

The purpose of this study was to find out what home economists have been contributing to the food relief program in each state, and particularly what dietitians have accomplished. In January, 1933, when the size of the relief problem of the country became apparent, Dr. Louise Stanley, chief of the Bureau of Home Economics, asked the head of the home economics schools in each land grant college and university to call a meeting of people representing the major fields of home economics work in the state, to formulate a plan by which their services could be placed at the disposal of the relief organizations. Such a meeting was called in most states.

In order to obtain a picture of the contributions made, answers to a number of questions were sought. An inquiry sheet was sent to the head of the school of home economics in each land grant college and university, to the state chairmen of the Community Education Section of the American Dietetic Association, and to those members of the Association who indicated their willingness to work on the committee. Replies were received from 33 states and Ontario. Some of those answering the questions thoughtfully included samples of printed material as well as details about their work.

The first question was: Does your State have an organization of home economists for dealing with problems relating to the maintenance of living standards during the depression? Of the 33 states replying, half have some type of organization, either the state home economics association, a committee of that association, a committee coöperating with the dietetic association, or an independent committee. Coöperating organizations are the state college extension departments, home economics staffs, and other existing agencies.

[1] Abstract of report presented before the American Dietetic Association, Washington, D. C., October 17, 1934, by Marie Dye, Dean of the Division of Home Economics, Michigan State College.

What types of services are being given by women trained in our profession in these times of economic stress? Thirty of the 33 states sending replies have prepared low cost menus. Twenty-two states are giving assistance in the planning of special diets on relief budgets. Planning of budgets for relief organizations is another way in which 26 states are giving professional help. No effort was made to find out if the budget was for food alone, or whether it included clothing, fuel, rent and incidental expenses. In recognition of the personal differences in food customs, habits and attitudes that underlie the diet problem, 25 states reported some type of educational work in foods, in addition to the regular rural extension programs with adults and the adult educational program of the departments of public instruction.

While home economics is not concerned primarily with recreation, it is concerned with young people and has much to contribute to their recreational and educational programs, especially in the fields of foods, clothing and crafts. Only 7 states reported, however, that they are dealing with this problem. Since recreation is needed not only by the adolescent, but also by the younger children and the parents, 8 states are giving this type of help.

In 24 states, coöperation of dietitians with the emergency nursery school program was reported. Some of these schools had a dietitian on their staffs. In the same number of states home economists also worked with the state departments of public instruction to foster an adult education program.

Dietitians have been cognizant of the need for having a nutritionist on the staff of the state welfare department or emergency relief administration, for they recognize the importance of adequate food and the difficulties involved in securing it for people on relief. Even one trained worker in most states cannot give enough supervision to insure a fairly satisfactory supply of food. Since food supervision is one of the most important phases of relief work, it is surprising to find only 25 out of the 33 states with a trained person in charge of it. In some states this means only a part time service by a member of the extension or resident staff of the state college, or a dietitian of the department of public health. In the 8 states replying "no" to the question, "Is there a trained nutritionist on the state welfare staff?" responses to other questions suggested that trained people were giving advice and help in most cases.

One of the most comprehensive programs has a director with 6 assistants, 21 district supervisors, and 28 county workers who are trained in

nutrition. Another state has employed 45 additional home demonstration agents who spend half of their time with families on relief. Still another has a director with 8 assistants and 28 county workers.

In one section of the inquiry sheet space was allocated for the indicating of additional problems on which home economists had been working, and special features of the state program. The replies were most interesting, showing wide diversification. Educational programs were frequently reported, including work with foreign groups. Connecticut, for the past 3 years, has had a program of nutrition classes for women. Kentucky had a camp for 80 unemployed girls from 16 to 20 years of age, where classes were taught in foods, nutrition, health, clothing, child care, music, business and social English. Minnesota had a camp for unemployed women at University Farm. In the upper peninsula of Michigan, a 3 months' course was held at Northern State Teachers College for unemployed Finnish girls whose families were on relief. The students lived in a dormitory, doing all the work, and were given training in food preparation, cleaning, laundry work and child care, to prepare them for work in homes. Most of them obtained work at the end of this time. Several states gave short courses for training social workers and visiting nurses in making budgets, planning low cost menus, etc. In North Carolina, two-week training courses were given at the Women's College for emergency teachers in the fields of nursery education, parent education, and homemaking. New York had many classes taught by people on relief rolls.

Special radio programs have been fostered in some states where good nutrition, low cost menus, and budgets have been featured. Emergency canning centers have been organized and canning demonstrations given in a nationwide effort to conserve food. The use of dried skimmed milk and whole cereals has had wide publicity, especially in New York.

Feeding transient men, and sometimes women, is being undertaken in many communities. The meals may be free or sold for only a few cents. School feeding programs have been planned in some states. In the South, special work in foods for the prevention of pellagra has been an important problem.

Although most of these services are planned for emergency conditions, they will be found to represent permanent needs. If individual dietitians and home economists or their professional organizations are to accomplish the greatest good from their time and effort, it would seem that there

should be a general clearing house for plans. This could probably best be a permanent state committee made up of representatives from various fields of work. Officers of state organizations would be able to direct the work and avoid serious overlapping and unnecessary duplication of effort. Even though the committee met only once or twice a year, it would serve to coördinate interests and spread information.

This plan was put into effect in Michigan when the Home Stabilization Committee was organized. The state dietetic and home economics associations were represented on it, also the extension staff, college and high school teachers, teacher trainers, city supervisors and dietitians. The committee made a brief survey of some of the needs of the state and formulated a plan for state use. The plan was published in a bulletin which was reviewed in the September, 1934, issue of this JOURNAL.

THE DEFLATION OF DIETETICS

The frequent invasions into highly technical fields by those whose training and experience often lie in a totally different domain, seem paradoxical in this age of specialization. From time to time the medical profession undergoes considerable probing. More recently there has been a free for all tendency to offer advice in the field of dietetics, broadcasting, for example, discussions of food economics or therapy from an insecure source. A pointless detour into the domain of the dietitian appears in the *Journal of the American Institute of Homeopathy* for January, 1935. The writer bases his paper on the results of a questionnaire in which 100 questionees detailed how they "felt" about hospital food costs and food wastes. Eighty-eight per cent "felt" there was waste on hospital trays, and that forty per cent of the food on private trays was wasted. The tabulation does not state what type of hospitals was investigated, nor how the "feeling" as to amount of waste was determined. The questionees obviously waived all responsibility; ninety-four per cent said their staffs did not "control dietetics," whatever that might mean. Eighty per cent believed that hospital costs could be reduced if food were ordered by the physician in "quantities suitable" and "charged at a scheduled price." The writer does not say how the already overburdened physician would find time to supervise this system.

The author of this paper states that the doctor should control individually selected diets since there is "no greater symptom-producing

agent than the many varieties of single foods, and no greater toxic agent is more to be feared, for aggravation resembles closely the original symptoms"! Interesting, perhaps, if the writer would explain the meaning of this statement. The "economic distribution of diets" should begin with "elimination of certain foods, reduction in quantity of food, and adoption of basic food diets." Three tests: reaction of the urine, urinary ammonia and alkali reserve would measure the "quantity of any food," not "calorized units."

A series of wishful thinking statements tends to exasperate rather than convince a reader. "If the people were properly fed and were able to understand food reactions fully, more than half our illness would disappear." "In Philadelphia, Pa., all our schools are supervised by high salaried dietetic supervisors. Yet these children are poorly nourished if their glandular system is at fault." And what might this mean? " . . . dietetics, especially vitamin B, is not alone in its effects on nutrition, for it has been shown to alter and augment glandular secretions of the mucosa and one can readily see, from this, its influence on somatic symptomatology." Whether it is dietetics or vitamin B that alters glandular secretions, it is difficult to say; and if they do or it does, what they do or it does is still somewhat hazy.

According to psychologists, there are two kinds of thinking—pleasure thinking and reality thinking. We shall leave it to the gentle reader to decide which is indulged in by the writer of the reverie under discussion.

FERA Canning Projects in Nebraska

Unlike old Mother Hubbard's cupboard, the larder of poor families on relief rolls in Scotts Bluff county of Nebraska was far from bare this past winter, as far as vegetables are concerned. Such a statement is strengthened by the fact that 22,200 cans of products such as string beans, beets, carrots, corn, sauer kraut, Swiss chard, spinach, tomatoes, vegetable soup, succotash, apples, plums, and rhubarb were canned for use in the country by the centers located in Gering, Lyman and Mitchell.

The canning project for the state was under the supervision of county nutrition advisors directed by Florence J. Atwood, nutrition supervisor of the FERA for Nebraska. Of the 200,000 cans of garden produce canned in the state, the three centers in Scotts Bluff county turned out more than 86,000 cans of vegetable food stuffs, or nearly one-half of the total. The county nutrition advisor, supervised, with two assistants, the canning done in Scotts Bluff county.

Home-sized equipment was in use as all centers were organized primarily as home canning projects in order to take care of the excess produce and at the same time give work to those on relief. In most cases the woman of the family was the one to work out the budget, while the man was left at home to take care of the family.

The canning centers were miniature factories and with but one shift of 25 workers, turned out about 1,200 cans daily. The produce was first brought to the sorting tables, where it was graded and only the best canned. The products were then washed and sent to the preparation tables. Tomatoes were peeled, corn taken from the cob, and other necessary procedures accomplished, after which the produce was sent to the precooking unit. Here it was cooked and then placed in cans which were sealed by a hand machine capable of sealing seven cans a minute. The filled cans were then placed in one of the pressure cookers and left there for the period of time recommended for each particular food product. After processing, they were placed in an ice-cold cooling tank until thoroughly chilled. This marked the end of the canning process and the beginning of the distribution.

Any one in the county was granted the privilege of the canning center. The family on relief was requested to give ten per cent of their canned products to the county and in turn they received ninety per cent as their share. Those families not on relief received sixty per cent as their share and gave forty per cent to the county. On such a percentage basis the county accumulated 22,200 cans of products to be distributed throughout the winter to the families whose gardens failed to produce, or to those families who did not have gardens in which to raise vegetables.

In Gering, a total of 728 customers were served, and of these eighty per cent were families on relief rolls. As a result many of the relief families acquired sufficient canned products for use during the winter.

The beginning of these canning centers can be said to have started in the spring when the state distributed $50,000 worth of garden seeds, sixty per cent of which went to persons who planted the seed in home gardens. Ten per cent was used in community gardens and thirty per cent in project gardens. Because of the severe drouth in Nebraska, many of the gardens did not mature, hence only seven canning centers, instead of the originally planned thirty, were operated. At the same time the seven plants gave employment to more than 600 persons, a part of the work relief program of the FERA in Nebraska.

Besides the vegetable and fruit canning centers at Norfolk, Gering

Mitchell, Lyman, South Sioux City, and Bridgeport, apples alone were canned at Falls City for distribution over the entire state. Meat processing, which amounted to some 4,700,000 cans, was carried out at Plattsmouth, Nebraska City and McCook. The meat was canned under contract by commercial canneries. Some plants also put up broth in gallon cans to be used primarily in the transient shelters. This brief summary shows what has been done in Nebraska to meet the needs of the relief families.—HELEN NEWBERG, nutritionist and home advisor of Scotts Bluff County, Nebraska.

NUTRITION COURSES IN SOCIAL SERVICE SCHOOLS

Because good nutrition is such an important factor in the physical and social well-being of family groups, case workers must have a working knowledge of the fundamental principles of nutrition. Planning for the dietary needs of children and adults cannot be ignored or avoided by the social worker whom the family has learned to look upon as an advisor. She must be prepared to guide the selection of the food supply and to answer intelligently those questions pertaining to food which apply to the social problem involved.

In order to give her the necessary information and background, some study of nutrition must be included in her preliminary training, but this study must be based upon the practical application of dietetics rather than upon theoretical precepts. Keeping in mind the fact that nutrition is only one of many subjects which must be included in her curriculum, it is easily seen that it must be correlated with and fitted into her entire schedule of class work. The course which is designed to arouse in the case workers appreciation of and interest in every day food problems is going to be far more valuable to her than the one which attempts to burden her with the highly scientific material which the dietitian needs.

The planning and teaching of a course in nutrition for social service schools should be done by a person who not only is well versed in dietetics but who has also had enough experience in field work to appreciate the problems confronting the home visitor. The average housewife does not ask about the chemical composition or reactions of the various substances. She is not concerned with the number of grams of protein, fat, and carbohydrate which her diet contains. It does not matter to her how the doctor arrives at a specific formula for the baby. She wants to know what foods her family needs and why. She wonders how her all-too-small allowance is going to stretch to cover the many needs of her chil-

dren and herself. She is curious about the products which she sees and hears advertised. To answer these practical, commonplace questions, no one needs more than basic principles, experience, and current information. Beyond the realm of normal nutrition, the social worker only needs sufficient knowledge to recognize the problem and direct it through the proper channels to the person whose duties and training are specialized to handle it.

The social worker must be convinced of the importance of a well balanced daily menu. Case studies of patients suffering from dietary deficiency diseases and the opportunity to follow the treatment of such patients would be valuable teaching aids. Human beings are always more interesting than textbooks. Observing the way in which such cases respond to slight alterations in their food intake could not fail to sell the idea that diet does make a difference.

As far as theoretical work is concerned, the social worker probably needs to know what foods will satisfy the nutritional requirements of the human body. She should be informed about the various food groups and the value of them. She must be familiar with the racial and religious customs which influence the choice of food. And she should know a great deal about the science of marketing. With her interest aroused and a working knowledge of principles which she can use every day, her preliminary training will have paved the way for her to incorporate good nutrition into the plans of social adjustment which she will be called upon to make.

No course of nutrition during her training days can permanently serve the social worker's needs. She must be kept up to date and her knowledge must keep pace with the progress of the science. Learning where to look for reliable information and how to discriminate between true and false seems to be a logical solution to this problem.

Convinced of the importance of good nutrition, supplied with fundamental principles which are practical, and given a knowledge of where to turn for help when needed, the social worker will be equipped to meet the ordinary food problems which she encounters.—SOPHIE HALSTED, director of nutrition, City of Detroit.

MORE ABOUT DIET IN RELATION TO TEETH

Within the last decade, an appreciable amount of work has been done on the relation of diet to teeth. The results are somewhat diverse and to date seemingly no unassailable general conclusion has been reached.

Most investigators are united in the belief that diet, as such, does influence tooth health, but all are divided in their opinion as to the factors in the diet which exert this influence. The Mellanbys[1] in England and Anderson[2] in America claim that vitamin D is the effective agent. Hawkins[3] believes that the acid-base balance and the calcium-phosphorus balance are important. Boyd, *et al.*[4] say that calcium and phosphorus are important, but more in respect to the amount retained than the actual concentration of inorganic constituents of the body fluid. Wallace[5] would restrict the fermentable carbohydrates and would give what he calls detergent foods. These are raw fruits and vegetables, meats and toasted breads. Koehne and Bunting[6, 7] believe that the secret of successful treatment lies not in *what* is included in the diet but in *what* is omitted from it. This "what" is concentrated sugar.

By far the greatest number of investigators believe that a well-balanced diet, composed of normal foodstuffs, supplemented by vitamin D, is the chief factor in combating tooth disease. They recommend as a daily basal ration: milk, 1 quart; egg, 1; vegetables, 2 servings, one of which is tomato; fruits, 2 servings, one of which is orange; and cod liver oil. The remainder of the calories and protein necessary for a well-balanced diet are to be obtained from meat, potatoes, whole grain cereals, bread and butter.

Until more conclusive evidence of the efficacy of any one dietary factor can be presented, it may be well to follow a middle course and incorporate in the diet all those factors which may have a possible bearing on tooth health. The basal ration as advocated is excellent. The choice of calorie-giving foods should not be made from concentrated sweets as jam, sugar, cakes and candy, but from wholesome "natural" foodstuffs. Orange juice and lemon juice should be used freely, and detergent foods supplied in the form of raw vegetables and raw fruit salads.

Until a definite and generally accepted solution to the problem of diet and teeth is reached, it is well to remember that the health of the tooth

[1] Mellanby, May: Medical Research Council Special Report Series, No. 59, 1931.
[2] Anderson, P. G.: J. A. Dent. A., 21, 1348–1366, August 1934.
[3] Hawkins, H. F.: J. A. Dent. A., 21, 630–635, April 1934.
[4] Boyd, Drain, Stearns: J. Biol. Chem., 103, 327–337, 1933.
[5] Wallace, J. S.: J. A. Dent. A., 21, 1384–1391, August 1934.
[6] Koehne, M., and Bunting, R. W.: J. Nutrition 7; 657, June 1934.
[7] Bunting, R. W.: J. A. Dent. A., 22, 114–122, January 1933.

Editor's Note.—An interesting popular account of Dr. Bunting's views appears under the "Medicine" section of *Time* for April 1, 1935.

is doubtlessly closely related to the health of the body as a whole, and that foods which favor adequate body nutrition will be likely to favor general tooth health.—D. RUTH PEARSON, B.A., assistant dietitian, The Western Pennsylvania Hospital, Pittsburgh, Pa.

MORE ABOUT LABELING[1]

The position of the Consumers Division, National Emergency Council, favoring "quality standards of canned goods," as noted in excerpts from Supplement II to Bulletin III, submitted to this JOURNAL by Hazel M. Hauck, assistant professor of home economics, Cornell University, Ithaca, N. Y., is briefly as follows:

> Quality grading is required of canners in the Dominion of Canada, and no court tests have arisen there during fifteen years of the law's operation.
>
> There are so many brand names on the market that the consumer cannot make an intelligent choice without expensive experimental buying.
>
> While it is true that grade labeling might shift advertising emphasis away from unsupported claims toward detailed information about the product, it would deny to no advertiser the privilege of describing why—within its grade—this product has peculiar excellence and is a good buy at the price.
>
> The Government is offering the services of its experienced agencies to coöperate with the canners' experts. Under NRA, industries are invited to set up their own committees to study standardizing problems and to agree on promulgating them when feasible. The industrial objective of this is to prevent unethical producers from foisting on the public an inferior product at a price beyond its true worth.

In Canada, where grading is obligatory and where consumer reception has been tested, buying is done by grade on the following basis: 10 per cent Fancy (Grade A), 50 per cent Choice (Grade B), 40 per cent Standard (Grade C).

The Government advisers favor the use of labels of definite grade designations, such as the grade A, B and C quality identifications which have been adopted by the Bureau of Agricultural Economics as a basis for its permissive grading and certification service. Specifications for the three levels of quality have been drawn up by bureau experts, and promulgated as Government grades, for the most important food crops canned.

[1] *Editor's Note.*—Another viewpoint appeared in the March JOURNAL, pp. 493–95.

The committee of Government representatives named to advise the Administration in drafting standards, grading and labeling provisions for the Canning Code, submitted a report, which said in part:

> We disagree with the Canners' Committee that collective quality designations are impractical and must be rejected in any program of quality labeling for the benefit of consumers. In the absence of a more simple logical scheme of quality nomenclature, your committee inclines to the belief that 'Grade A', 'Grade B', 'Grade C', etc., or 'Grade 1', 'Grade 2', 'Grade 3', etc., are terms best suited for informative labeling purpose. We feel the Consumer needs will be met by the inclusion on canned foods labels of the following information: (1) a concise, truthful statement of grade; (2) such additional explanatory statements as style of pack, count or pieces, size of units, number of servings, as may be appropriate for the product. To adopt the plan ('descriptive terms') would result in placing such multiplicity of information on the label that it would merely result in consumer confusion.

CURRENT LITERATURE

American Journal of Digestive Diseases and Nutrition

Vol. 1, February, 1935

*Growth of diabetic children. H. J. John.—p. 855.
*The nutritional and digestive system aspects of pernicious anemia. L. G. Zerfas and B. S. Cornell.—p. 857.
*Medical aspects of peptic ulcer with special reference to diagnosis and treatment. A. F. Chace.—p. 866.

Vol. 2, March, 1935

*Diarrhea. J. L. Kantor.—p. 1.
*Constipation. H. J. Spencer.—p.7.
Glycosuria and lactosuria of pregnant and of lactating women. H. J. Brock and R. S. Hubbard.—p. 27.

GROWTH OF DIABETIC CHILDREN. Most authors agree that, at the onset of diabetes in children, the great majority are at or above the normal standards of height. As the disease progresses, many of these children seem to fall below the normal standards.

PERNICIOUS ANEMIA. The cause of pernicious anemia is not yet completely demonstrated. Much experimental work on anemias due to vitamin deficiency has been undertaken, but no reproduction of a condition resembling human pernicious anemia has been accomplished. Experiments suggest that avitaminosis might play some rôle in pernicious anemia. Minot and Murphy obtained remarkable results in anemia with a special diet rich in proteins of good biological value, particularly liver, low in fat and carbohydrate and with vitamins well supplied. Possibly dietary factors actually play a part in the production of the disease.

PEPTIC ULCER. Peptic ulcer is a systemic disease which is becoming more prevalent. The diet should be balanced as regards the proportions of carbohydrate, fats and proteins and should supply the caloric needs of the patient. For ulcer patients who are unable to take fresh fruit juices, the antiscorbutic element may now be added in the non-irritating form of crystalline vitamin C. Milk may be made more digestible by mixing it with strained cereal gruel, malted milk or arrowroot. During the second week of management, Melba toast, unsalted butter, well cooked cereal and puréed vegetables may be added. During the third and fourth weeks, finely minced chicken, fish, lamb chops or sweetbreads may be given once a day. Even after the ulcer is healed a modified dietetic regime should be followed for a year. Coarse and irritating foods, condiments, sweets and stimulating foods should be avoided. Tea, coffee, alcohol and tobacco should be interdicted.

DIARRHEA. General body rest is the first measure to institute in the treatment of diarrhea. The diet should be carefully watched. All drinks should be served hot. Roughage must be avoided and small frequent feedings are advisable. Milk is not well borne by the majority of patients but meat is usually well tolerated. Scraped raw apple seems to exert a specific effect on the diarrhea of children.

CONSTIPATION. Fundamentally, constipation may be defined as undue and habitual delay in the evacuation of fecal wastes Anatomically, the human digestive tract is a compromise between that of the herbivorous and the carnivorous groups of animals. The herbivorous gut is 25 to 100 times the animal's body length, the carnivorous, 4 to 8 times, and the human not over 8 or 9 times the body length. These facts have real significance in the selection of the diet and the treatment of constipation. The food which has been digested in the stomach normally arrives at the cecum in a soft, watery state in from two to four hours; usually the mass has left the ileum in from four to six and one-half hours. Probably the food residues should normally

pass through the alimentary tract in forty-eight to seventy-two hours and not faster. The diet should be fitted to the problem. For spasm, a smooth diet relatively free from roughage and cellulose is indicated. If the patient is of the type that responds to all digestive disturbances by the elimination of first one food and then another, the problem of lack of volume, calories, vitamins and roughage may arise.

American Journal of Nursing

Vol. 35, March, 1935

*Dried fruits. L. G. Graves.—p. 233.

DRIED FRUITS. Dried fruits mature on the trees before being harvested and thus have a flavor and aroma that cannot be obtained by artificial ripening. From the standpoint of nutrition, dried fruits are practically the same as fresh fruits. The water which has been removed in the drying process is practically all returned by absorption during the cooking of the fruit. The essential mineral elements are practically all retained in dried fruits. Prunes, dried apricots and peaches are good sources of vitamin A. Dipping prunes in a lye solution has no effect on the vitamin A content. Long experimentation on human beings gave no evidence that prunes affect the alkaline reserve of the blood. The smaller or medium sized fruit yields more edible flesh per pound than the larger, more expensive prunes. From five to five and one-half pounds of fresh peaches or apricots are needed to make one pound of dried fruit. A variety of uses for dried fruits in the diet is suggested.

The Commonhealth

Vol. 21, No. 2, 1934

*Symposium on diabetes.

Among a group of papers upon diabetes, submitted from the George F. Baker Clinic are notably those of Elliott P. Joslin, M.D. on diabetes, Alexander Marble, M.D. on diabetic coma and by Priscilla White, M.D. on the diabetic child of today. Dr. Joslin cites the statistics showing the very marked increase in the death rate among diabetics of fifty years of age and over, and a slight decrease among the age group of twenty- to forty-nine years. The life span of the age group of twenty years and under has practically doubled.

Dr. Marble emphasizes that death from diabetic coma is needless and cites the drop in the death-rate from 60.8 per cent in the Naunyn era to 4.8 per cent at the present time. Six simple rules should be taught the patient to control coma, and early diagnosis and aggressive treatment by the physician are urged. This article warrants the statement that diabetic coma is preventable and that deaths from diabetic coma are needless.

Dr. White discusses juvenile diabetes as an interesting problem which has developed since the discovery of insulin. The differential diagnosis, dietary adjustment and control of the disease, are outlined. The entire juvenile mortality over the period of a year in this clinic was 1 per cent. The importance of patience, infinite tact and understanding as applied to the problems of the individual child must be recognized since control of the disease rests so largely upon the patient.

Journal of the American Dental Association

Vol. 22, February, 1935

*Neglected factors in the study of dental caries. B. G. Bibby.—p. 222.

*Chemical study of human saliva indicating that ammonia is an immunizing factor in dental caries. C. J. Grove and C. T. Grove.—p. 247.

Vol. 22, March, 1935

*Some observations on diet and dental disease. R. A. Ferguson.—p. 392.

Relation of certain aciduric bacteria and certain food elements to dental caries. D. C. Lyons.—p. 409.

*An investigation into the possible relationship of ammonia in the saliva to dental caries. J. White and R. W. Bunting.—p. 468.

NEGLECTED FACTORS IN DENTAL CARIES. The general belief that the resistance of a tooth to caries depends on the absence of formative defects lacks definite proof. The well-formed organic structures of the enamel are resistant to the enzymatic action of all oral bacteria, especially lactobacillus acidophilus. The effect of food in changing the immediate bacterial environment of the teeth is not known, but the formation of food deposits on the teeth may be influenced by the nature of the carbohydrate foods eaten and the frequency of eating. Many con-

tributing factors in the origin of dental caries still remain unexplained.

AMMONIA AS AN IMMUNIZING FACTOR IN DENTAL CARIES. Studies show that the quantity of ammonia in the saliva has a decided effect on the physical character of the saliva, which, in turn, alters the conditions favorable for immunity or susceptibility to dental caries. The variability of the ammonia of the saliva cannot be regarded as a local condition of the mouth but must be considered as a reflection of some deeper imbalance. Dietary regulation has long been considered as a possible means of controlling dental caries. Alkaline diets raise and acid diets lower the ammonia content of the saliva. Salivary examination for ammonia in the saliva is recommended in the diagnosis of caries. While the ammonia content of the saliva is a most important factor in dental caries, it may not explain all phases of the disease.

OBSERVATIONS ON DIET AND DENTAL DISEASE. Dental caries may be classed as a local expression of constitutional disturbance originating in nutritional deficiency. The prevalence of this disease is in direct ratio to the degree of civilization, the use of the so-called modern foods and, to a lesser extent, climatic conditions. The diet must be sufficient in caloric value and contain certain vitamins and minerals if dental health is to be established and maintained.

AMMONIA IN THE SALIVA OF DENTAL CARIES. The reaction and ammonia content of activated saliva showed marked variations in the patients studied. No significant differences between the amounts of salivary ammonia on caries-free and caries-susceptible individuals were observed. The work of Grove, published in the February issue of this journal is not substantiated.

Journal of the American Medical Association

Vol. 104, February 2, 1935

Bearing of certain physiologic facts on gastro-intestinal surgery. J. S. Horsley.—p. 367.

*Jaundice. F. C. Mann and J. L. Ballman.—p. 371.

Vol. 104, February 16, 1935

*Effect of diet in experimental amebiasis. Editorial.—p. 564.

Vol. 104, February 23, 1935

*Changes in the gastro-intestinal tract in deficiency states. T. T. Mackie and R. E. Pound.—p. 613.

*Cevitamic acid (ascorbutic acid) in the treatment of infantile scurvy. A. F. Abt and I. M. Epstein.—p. 634.

Vol. 104, March 2, 1935

*Classification and differential diagnosis of the anemias. R. L. Haden.—p. 706.

Vol. 104, March 9, 1935

*Hemoglobin regeneration as influenced by diet and other factors. G. H. Whipple.—p. 791.

*Nutrition and infection. S. W. Claussen.—p. 793.

*Antirachitic cow's milk. Comparative study of antirachitic value of irradiated cow's milk and of milk produced by cows fed irradiated yeast. H. J. Gerstenberger, A. J. Horesh, A. L. Van Horn, W. E. Krauss, and R. M. Bethke.—p. 816.

Intermediary metabolism of fat. Editorial.—p. 837.

Vol. 104, March 16, 1935

*The physiology of the phospholipids. Editorial.—p. 926.

*Cod liver oil. Current Comment.—p. 926.

Vol. 104, March 23, 1935

*Behavior of vitamin D. Editorial.—p. 1008.

JAUNDICE. Some of the nutritional disturbances found in jaundiced animals are associated with the loss of normal bile from the intestine but the loss of appetite appears to be due to the effects of retained bile. The anemia and diminution of plasma protein that occur in the animal with jaundice may be in part due to dietary and absorptive factors. It might appear that large amounts of meat should be added to the diet but the reverse is true. After three months of complete biliary obstruction, few animals will survive a diet of meat for more than a week but will live for several months on a diet of milk and syrup.

EFFECT OF DIET IN EXPERIMENTAL AMEBIASIS. Those with wide experience in the treatment of amebiasis find that diet plays a large part in the severity of infection with *Endamoeba Histolytica;* persons on a restricted diet, particularly one high in carbohydrate, often have a more virulent infection than those on a full diet or on one low in carbohydrate. The New Orleans investiga-

tors have determined the effects of raw liver, liver extract, other liver fractions, cod liver oil, desiccated hog stomach and canned salmon when added to the diet of dogs infected with *Endamoeba Histolytica*. Feeding raw liver or liver extract to such dogs causes rapid and definite clinical improvement and healing of the intestinal lesions. Cod liver oil also has been found to have a beneficial effect. In contrast, the administration of desiccated stomach or the feeding of canned pink salmon caused rapid and severe exacerbation of the disease. The explanation of these investigations is not yet clear.

CHANGES IN THE GASTRO-INTESTINAL TRACT IN DEFICIENCY STATES. Deficiency disease may result from a defective dietary or from abnormal physiology of the gastro-intestinal tract. Evidence of deficiency states was found in 63 per cent of the seventy-five cases studied. These conditions presented the characteristics of partial deprivation of certain vitamins, of protein and of important inorganic elements. Changes in the small intestine were demonstrated roentgenographically in twenty-nine cases of ulcerative colitus and in three cases of tropical sprue. These observations suggest that changes in the small intestine are related to the deficiency states and perhaps play a rôle as a conditioning factor in their development.

CEVITAMIC ACID IN TREATMENT OF INFANTILE SCURVY. The council on Pharmacy and Chemistry of the American Medical Association has recently designated cevitamic acid as the approved nonproprietary name for vitamin C in the crystalline form. This acid may be isolated from various vegetable and animal sources, such as cabbage, and lemon juice. The oral administration of cevitamic acid seemed to cure infantile scurvy effectively in the three cases studied.

ANEMIAS. The normal growth of red blood cells requires the elements such as protein, carbohydrate, mineral salts and vitamins which are essential for all cell growth. In addition to these nonspecific building stones, the specific antianemic principle of liver and iron must be supplied. Liver is an excellent food and should be tried in every type of anemia.

HEMOGLOBIN REGENERATION. Liver stands out as the most potent diet factor in hemoglobin regeneration. Kidney, gizzard, spleen and pancreas also rate high as factors that favor abundant new hemoglobin production. Iron had been found to be the most potent inorganic element. At the present time, a systematic investigation of amino acids as diet factors in hemoglobin regeneration is in process. It is premature to make any definite statement about the amino acids, but phenylalanine, tyrosine, and proline appear to exert a definite influence on hemoglobin regeneration when added in moderate amounts to the basal ration of standard test animals.

NUTRITION AND INFECTION. Clinical observations indicate that loss of resistance to infection occurs in man when there is outspoken deficiency of vitamin A and probably of vitamin C. However, there is no evidence to show that the addition of any of the vitamins to the diet will increase the resistance to infection of the host when an inadequate diet has been consumed. There is little reason to believe that the administration of vitamins after the onset of an acute infection will exercise any benefit on resistance. Chronic infections have so far not been adequately observed, with the exception of tuberculosis.

ANTIRACHITIC COW'S MILK. Considering the curative and prophylactic assays of the composite butter fats and of the dried milks, it was found that the irradiated milk contained more vitamin D than did the yeast milk. In an actual study of rachitic infants, no practical difference in antirachitic efficacy was observed between cow's milk made rachitic on the one hand by irradiation, and on the other by feeding cows irradiated yeast, when the same amount of the antirachitic factor is administered as represented by an identical number of Steenbock rat units per day. Further data must be presented before the antirachitic effectiveness of

cod liver oil for the human infant can be accepted to be decidedly inferior to that of cow's milk made antirachitic by irradiation or by feeding irradiated yeast to cows.

PHYSIOLOGY OF PHOSPHOLIPIDS. Phospholipids are readily synthesized by the animal organism. Physiologic factors such as diet, activity, age and certain hormones are known to affect the phospholipid content of tissues, although in general the variations are not large. Diets containing large amounts of fat or carbohydrate increase the phospholipid content of the liver and of the blood. Certain diseases such as cancer, epilepsy and pernicious anemia cause decreases in the phospholipid content of the blood.

COD LIVER OIL. There is evidence to show that cod liver oil is superior to viosterol in the cure and prevention of rickets in human infants. Apart from the vitamin content, cod liver oil has other chemical attributes. Holmes and Remington have shown that American cod liver oil contains more iodine than do most ordinary foods. The content of iodine varies with the place where the fish are caught, the average content being nearly 9 parts per million.

BEHAVIOR OF VITAMIN D. When a comparison of viosterol dissolved in oil with cod liver oil was made on the basis of the prevention of leg weakness in chickens, the latter was enormously more effective. Recent investigations of activated milks indicate that milk irradiated directly is superior to cod liver oil when fed in amounts providing the same number of "rat units." There is accumulating a mass of experimental evidence which will inevitably result in a change in current views regarding the interrelationships between the various dietary factors providing what is now called vitamin D.

Journal of Home Economics

Vol. 27, February, 1935

*Vegetables in the diet: I. Yesterday. S. L. Smith.—p. 73.

Exhibit of food fads and fallacies. H. S. Mitchell.—p. 89.

Methods of retarding the rate of darkening of cut bananas. M. de G. Bryan and E. Plotz.—p. 94.

Vol. 27, March, 1935

History of food and drug legislation in the United. States. E. M. Andres.—p. 137.

*Vegetables in the diet: II. Today. S. L. Smith.—p. 146.

The relative importance of various characteristics in utensils used on the electric range. E. H. Roberts.—p. 174.

Vol. 27, April, 1935

The government and the consumer. H. Kyrk.—p. 201.

Lunch-room management in the county school. W. J. Hilty.—p. 211.

*Vegetables in the diet: III. Tomorrow. S. L. Smith.—p. 218.

Use of brand names in reports of research. J. V. Coles.—226.

VEGETABLES IN THE DIET: I. YESTERDAY. This is a historical introduction to the subject of the place of vegetables in the diet, with interesting quotations from early texts.

VEGETABLES IN THE DIET: II. TODAY. The history of vegetables, from a dietetic standpoint, is continued from the beginning of the twentieth century to the present time.

VEGETABLES IN THE DIET: III. TOMORROW. In this paper stimulating suggestions are offered as to further knowledge needed on vegetable composition, with regard to vitamin and mineral content; the selection, breeding and cultivation of vegetables; and the question of whether the requirements of optimal as compared with adequate nutrition are fully known.

Journal of Nutrition

Vol. 9, March 10, 1935

*The vitamin content of sultana (Thompson seedless) grapes and raisins. A. F. Morgan, L. Kimmel, A. Field and P. F. Nichols.—p. 369.

*The vitamin content of figs. A. F. Morgan, A. Field, L. Kimmel and P. F. Nichols.—p. 383.

VITAMIN CONTENT OF GRAPES AND RAISINS. Seedless Thompson grapes when preserved by freezing storage, even after air evacuation, rapidly lose both vitamin A and B activities. These grapes are rather well endowed with vitamin B when fresh and this endowment is largely retained in the natural sun-dried and soda-dipped raisins, but treatment of the fruit with sulphur dioxide previous to drying destroys much of the B vitamin. The fresh grapes are richer in vitamin A than has been

hitherto supposed possible, because really fresh fruit has not previously been examined. The dehydrated raisins, both sulfured and unsulfured, retained this factor in full. All the sun-dried raisins have lost most of the vitamin A activity. The frozen grapes appeared to lose antiscorbutic activity in storage and even the fresh grapes were only poorly endowed with vitamin C. Very little protective value could be ascribed to any of the raisins. Vitamin G appears to be poorly represented in grapes and raisins, but conclusive experiments are not yet available. Unsulfured soda-dipped dehydrated raisins made from Thompson seedless grapes retain practically all of the considerable vitamin A and B activity of the fresh grapes.

VITAMIN CONTENT OF FIGS. Kadota and Calimyrna fresh figs, preserved in frozen storage, were found to contain vitamin C in measurable amounts, similar to that found in grapes and apricots, but less than that in fresh peaches and fresh prunes. Mission and Adriatic figs contained but little of this vitamin. None of the dried figs, sulfured or unsulfured, sun-dried or dehydrated, retained measurable antiscorbutic value. The Black mission figs contain considerably more vitamin A precursor than do any of the light colored figs. The sulfuring process proved favorable to the retention of vitamin A of the Missions and Calimyrnas, but not of the Adriatics. Vitamin B (B_1) tested by the rat growth method appeared to be unfavorably affected by sulfuring preceding sun-drying. Vitamin G is present in figs; none of the variables of the drying process appeared to affect this vitamin.

Modern Hospital

Vol. 44, February, 1935

*How to strengthen the weak points in dietary administration. E. R. Tilton.—p. 96.

Food intake of children. M. V. Krause and L. Schulz.—p. 104.

No. 8. Valentine salad. A. Shircliffe.—p. 108.

March breakfast and supper menus. G. Bulman.—p. 110.

Vol. 44, March, 1935

*Small economies that bring large savings. L. Waite.—p. 112.

Nutty salad. A. Shircliffe.—p. 116.

Food poisoning—what may cause it and what may prevent it. H. A. Haynes.—p. 118.

April breakfast and supper menus. H. B. Anderson.—p. 124

STRENGTHENING WEAK POINTS IN DIETARY ADMINISTRATION. The best approach to the problem of economy in a dietary department lies in scrutinizing the most ordinary procedures to find out whether they justify their existence. Three major points are to be considered. First, are prices right and are those foods selected of the highest value? Second, are foods prepared and served so that there is a negligible percentage of waste? Third, are employees giving a just return of service in proportion to their salaries? A meat survey showed that buying beef cuts instead of the whole carcasses meant an actual savings of approximately 40 per cent on identical menus.

SMALL ECONOMIES THAT BRING LARGE SAVINGS. Small leaks can undermine a seemingly efficient organization. In a special diet laboratory there is economy in using printed forms for menus and special diets. Much time can be saved by using the regular menu food as far as possible for special diets. Frequent visits by the dietitian to the patient tend to create satisfaction. A tabulation of all canned and perishable foods as to quality, unit cost and cost per serving helps to keep within the limits of a budget and facilitates intelligent purchasing. A monthly financial report of the entire expenditures of the department is highly recommended.

ASSOCIATION PROGRESS

President's Message

The report of the Membership Campaign in this section of the JOURNAL is rather encouraging, is it not? The organized work of this committee was completed April first, but without doubt scouting for new members has become somewhat of a habit. Quietly and effectively, new names will continue to be added to our roster.

During May and June, another group will have an opportunity to interest this year's graduates of approved training courses in joining our Association. This group is the one that has been in close contact with the students for nine months or more. Instructors, and especially directors of these courses have a real opportunity to point out to their students the advantages of identifying themselves upon graduation with their professional organization. Students will never cease to be grateful for such guidance.

When this first step has been taken what is more natural for the young graduate than to take the second step, that is, to identify herself with our Placement Bureau? This service, offered only to our members, costs so little and may mean so much to the recent graduate. There have been many openings this spring for young dietitians. Some of these have required no experience beyond the training course, others have demanded two or three years of actual work.

Requests reach the Placement Bureau for the mature woman as well, especially with administrative ability. To those in our membership now holding positions, but wishing for one reason or another to make a change, the Bureau offers a real opportunity. The right person placed in the right position is the aim of this service.

In the November JOURNAL you will recall having read a most interesting article, "Early Dietetics," written by one of the few pioneers in our field who is still living. Will you not interest your friends in buying one of the reprints which contains a good photograph of Mrs. Rorer? Proceeds from the sale of these reprints help a worthy cause, the Sarah Tyson Rorer Fund.—LAURA COMSTOCK.

The Cleveland Meeting

Marie Hines, director of dietetics of the University Hospitals in Cleveland and chairman of local arrangements for the coming meeting, writes enthusiastically of convention plans. According to Miss Hines, everything is "buzzing." She is receiving active support in an important part of the work, the collecting of money, from Helen Robertson, Dorothy Shank and Charlotte Stannard, Home Economics Women in Business. Further plans were made when the local committee women attended the Ohio State Dietetic Association meeting in April. A glance at the tentative program shows that the interests of all groups have been considered: food clinic dietitians, those interested in administration, teaching and diet therapy, public health workers, heads of home economics courses, directors of approved courses, etc. It is seldom that the names of so many prominent speakers are assured so far in advance of a meeting as those noted in this tentative program. We note the names of Dr. William P. Murphy, Nobel prize winner in medicine for 1934, Drs. Charles Higgins and Henry J. John of the Cleveland Clinic, and Dr. W. R. Rose of the University of Illinois, among others. For the annual banquet it is hoped to have a man who is one of the most popular dinner speakers in the medical profession in this country, and a prominent representative of the Government as speakers.

The important topics of administration and community education, particularly along emergency lines, will not be neglected.

The Administration Section, under the able leadership of Anna M. Tracy, promises to reach the high point of last year's meeting. The ways in which dietitians are serving in emergency relief work will be discussed by many able women, including Faith McAuley, Marjorie Heseltine, Blanche Tansil, Mary Spalding, Anna Staple, Adelaide Spohn, Sophia Halstead and Gertrude T. Spitz. Apparently the program committee has not overlooked anything that will contribute to the mental and social entertainment of the visitors. No one should fail to attend this meeting.

Report of Inspection Chairman

The Boston Dispensary Food Clinic offers a special six months' course to experienced dietitians interested in fitting themselves for positions as food clinic dietitians. Frances Stern will be in charge of the course. One month will be given over to social service experience, one month to health education, one month to be spent at a child guidance center, two weeks at Forsyth Dental Infirmary, and two weeks for visits to various community organizations. Two months out of the six will be spent with Miss Stern and her staff at the Boston Dispensary Food Clinic. Further details may be obtained by writing directly to Miss Stern.

Mrs. Gladys Hall Silkey is on leave of absence for one year from the dietary department of Indiana Hospitals. She will spend this year organizing the post-graduate student dietitian course at Saint Louis University, St. Louis, Missouri. Firmin Des Loges and Saint Mary's Hospitals in St. Louis will coöperate with the University in giving this course.

Institutions comtemplating starting a training course for dietitians and wishing the approval of the American Dietetic Association in this work may secure preliminary information and instructions by writing to the Chicago office of the Association.

A plan for handling the approval of newly organized training courses for dietitians is now being considered by the Executive Committee. This plan will be published in the July JOURNAL.

The following is the schedule for inspections, in the probable order in which they will be made:

April 26 to May 15

Cleveland, Ohio	Virginia
Rochester, N. Y.	North Carolina
Massachusetts	Florida

May 15 to June 15

Missouri	Oregon
Oklahoma	Washington
Iowa	British Columbia
Nebraska	Alberta
California	Minnesota
Utah	

July 1 to 15

Michigan courses	Indiana
Remaining Ohio courses	Illinois

July 15 until completed

Pennsylvania	Maryland
Greater New York	District of Columbia
Connecticut	Georgia
New Jersey	Tennessee

More specific information about dates will be sent to the institutions concerned at least two weeks before inspection. The inspection chairman regrets very much that her other responsibilities made it impossible for her to complete this work by June 1. It is hoped that the early publication of the approximate schedule will eliminate serious interference with vacation plans.—MARTHA KOEHNE.

The Membership Campaign

The Membership Campaign officially closed April 1, 1935. The form of procedure used so successfully last year was followed again this year. Chairmen were appointed in thirty-three states and each chairman has received one letter every month from the national chairman, since last October. The results of the campaign are given below. The real results cannot be judged from these figures. The campaign has created interest throughout the country, especially in the South where one member writes "At our mid-winter meeting we found many dietitians who were eligible for membership in the

American Dietetic Association and gave out a great many application blanks at this time. We found the dietitians most enthusiastic and feel that we will have quite a few new members."

	HOSPITAL	WELFARE	SCHOOL LUNCHROOM	DORMITORY	COMMUNITY	COLLEGE PROFESSORS	GRADUATES OF APPROVED COURSES	MISCELLANEOUS	TOTAL
Alabama	1			1			1		3
Colorado	3		1	1					5
Georgia				1		1			2
Illinois	4	1						1	6
Indiana	17			1		4			22
Iowa	2				1				3
Maryland	1		1			1		5	8
Michigan	3					1		2	6
Minnesota	5	1			1	1		1	9
Nebraska	4	1				2	2		9
New Jersey	4						1		5
New York	8				1	6	12		27
Ohio						1		1	2
Oklahoma	2					1			3
Pennsylvania								28	28
Tennessee	1			2	2	3	1		9
Texas*									
Utah	1		1			1			3
Washington State	5							2	7
Totals	61	3	3	6	5	22	17	40	157

* 50 application blanks given out; returns not yet received.

Pennsylvania, a comparatively newly organized state, has 28 new members—a record of which it may well be proud.

The Western states have shown a commendable interest, bringing us 24 new members, with Nebraska in the lead.

While the campaign closed officially April 1, this does not mean that our work is over. The Association is glad to receive applications at any and all times and we stand ready to serve.—EFFIE MAY WINGER, *national chairman*, Rochester General Hospital, Rochester, N. Y.

Should the Chief Dietitian Require Her Graduates to Become Members of the Association?

Yes. When the student receives her diploma signifying completion of her training course she is eligible for membership, and this should be required by the chief dietitian. In accepting students we assume certain responsibilities, one of which is developing in them a deeper awareness for the ideals of their profession. The well trained student should look forward anxiously to the time when she can become a member of the American Dietetic Association. It should represent a goal toward which she has been climbing, and should be the culmination of five years of intensive study and work.

After finishing her training she will not always have someone at her elbow to offer her advice and guidance; she will still be labeled "inexperienced" and will need the assistance and stimulation of older members of the Association. These professional contacts are exceeding helpful to the young dietitian. Names she has become familiar with in her reading will take on personalities and become acquaintances if she widens her horizon by attendance at local and state meetings and national conventions. Delightful phases of such meetings are the pleasure of greeting old friends and making new ones, and the inspiration derived from being a part of a professional group.

The membership fee of five dollars is small when one considers that this also includes the JOURNAL which offers a means of keeping in touch with the organization, members and the latest developments in dietetics. Members also have the privilege of joining the Placement Bureau if they wish a position. Much detailed work and worry will be lifted from their shoulders when the Bureau assumes the responsibility of helping them to get a satisfactory location. Many hospital superintendents and dietitians insist that prospective applicants for positions be members of the American Dietetic Association. It would be unfortunate, indeed, to have some excellent position withheld because of failure to identify oneself professionally.

Association Membership a Goal for Student Dietitians

The director of every accredited course has a real responsibility in acquainting her students with the history, organization and function of her local, state and national dietetic associations.

While in college, students have been helped to form an opinion concerning their interest in one of the many specialities open to home economics graduates, through membership in home economics and dietetic clubs. The advice and guidance given by major professors regarding adaptability for post graduate training as a student, depends in a large measure on their knowledge, and interest in being members, and it is of vital importance that they actively participate in the activities of the appropriate associations.

The final responsibility for the student dietitian making application for membership in the national and state associations must necessarily be that of the director of the dietary department. She should personally assist each student in making application during her last month of training and follow this until advised of her acceptance by the membership committee. This should be listed as one of the requirements made known to the student dietitian at the time her application for post graduate training is accepted—in this way there can be no question in either the mind of the student completing her course or the director regarding this very important professional obligation and privilege.

As the student reaches this goal, she must be impressed with the responsibilities vested in these associations in the shaping of the policies of her profession, and with the prestige which membership makes available to her. One important feature is the opportunity for enrollment in the Placement Bureau to which employers seeking well qualified dietitians are increasingly turning. Employers realize applicants are judged here by their own professional group, and that their membership standing and recommendations are immediately available.—HELEN E. GILSON, Pennsylvania Hospital, Philadelphia.

Orienting the Student

In a recent article in this JOURNAL, mention was made of the responsibility a head dietitian has toward suggestions for the social life of her students.

As a graduate administrative student dietitian, a stranger to Boston from the Pacific Coast, I feel that attempts should be made by the directors to assist the students in planning their social life. It is so easy to become overwhelmed by the new environment that perspective is lost and valuable opportunities missed.

Personnel as well as size of the student group determines the kind and degree of supervision most effective. In general, a list of current amusements and entertainments could be posted with especial treats emphasized. Such lists could include museums and sight-seeing tours to the city's particular points of interest. Affiliation, as junior members, with a professional group such as the American Dietitic Association affords occasion to make professional contact as well as to broaden one's fields of interest. Fraternal, college or university club meetings give further opportunity to meet new friends.

A series of teas to which other student dietitians and directors are invited gives opportunity to meet others. If the institution in which the training is given has an employee association, attempts should be made for student coöperation. This, particularily in institutional management training, gives a feeling of being an integral part of the institution besides conveying employee understanding. Sunday evening forum groups of churches present other excellent occasions to meet young people.—MILDRED K. DUBOIS, graduate of the University of Washington, Seattle, Washington, and student, Administrative Student Dietitian Course, Women's Educational and Industrial Union, Boston, Massachusetts.

Progress in Porto Rico

Mary Barber, chairman of the Community Education Section, reports an interesting trip to Porto Rico in February. The primary object of this was to assist in the training of home demonstration agents.

The Department of Agriculture is just starting this type of extension work on the Island and Mary Ellen Keown, formerly a district agent in Florida, has been put in charge of the work. In addition to giving some lessons in methods of demonstrating to these girls, Miss Barber met all of the home economics classes in the University of Porto Rico. Rosa M. Torres, who is teaching dietetics at the University, received her nutrition training under Dr. Mary Swartz Rose. Miss Torres and her nutrition students arranged an exhibit for the home demonstration agents and various others who came to a meeting arranged by Miss Keown. An account of this exhibit appears below.

Nutrition Exhibit at the University of Puerto Rico

This exhibit was prepared by the students in field nutrition for the benefit of the home demonstration agents at the opening meeting of the instruction school in home canning. It consisted of one exhibit on vitamin B; another on calcium, phosphorus and iron; another on Puerto Rican and American fruits; a fourth on values of servings of Puerto Rican foodstuffs; a fifth on the nutritive values of the most popular soups of the island; and a sixth on the value of Annatto extract—the most potent vegetable source of vitamin A yet known. Some interesting facts were presented as follows:

The vitamin A content in units per ounce of foodstuffs

	units
Annatto Extract	28,000
Mango	840
Plantain (cooking banana)	560
Guava paste	280

Annatto seed or achiota is used on the island as coloring matter in the preparation of rice, stews and soups. One or two tablespoons of the seeds are added to lard in a small vessel and heated until enough color has been extracted. It is then added to the food. It had been added in the past primarily for aesthetic reasons. Since the discovery of its potency in vitamin A by Cook and Axtmayer of the School of Tropical Medicine in Porto Rico, more of it is now being used for nutritional reasons.—ROSA M. TORRES.

Affiliation News

Mary E. Smith, newly elected president of the Texas Dietetic Association, in a letter to Miss Comstock, states that 51 dietitians registered at their first convention, and that the constitution and by-laws were signed by 23 active and 3 associate members of the American Dietetic Association. The new association is beginning work immediately on student courses in the state. In line with a progressive spirit, an attractive folder was prepared in advance of the meeting, containing a greeting from Miss Smith, then president of the South Texas Dietetic Association, and an outline of the proposed state meeting. Houston papers gave extensive publicity to the meeting.

Fitting the Diet to the Patient

The American Journal of Digestive Diseases and Nutrition for November, 1934, has this to say editorially, discussing the question of whether or not "stomach specialists" or internists should be certified as gastroenterologists by a qualified national board:

> Not infrequently, even though his work may be considered lightly in certain quarters where what constitutes a gastroenterologist is so little understood or appreciated that the speciality is spoken of slightingly or is unrecognized, a hospital's dietetic efficiency and down-to-dateness—nay, even its very equipment—are made the responsibility of the gastroenterologist. One need but inspect the diet kitchens of any hospital in order to learn whether or not the specialty of gastroenterology is recognized in that institution. When it is not, "dieting" means not the exhibition of foods most conducive to aiding the individual patient and to combating his affection. In such a hospital, unless the services of a dietitian trained elsewhere by a gastroenterologist, or an expert in nutrition has been engaged, one finds that "dietetics" means only a miscel-

laneous collection of typed sheets. The list becomes augmented on the publication of each new textbook on diet and nutrition or whenever a "Big Chief" returns from a medical meeting where, usually from the thesis of a real gastroenterologist or one conversant with advances in nutrition, he has gleaned "something new."

Sad though it may be to admit, "dietetics" of the above sort in the majority of our hospitals is the rule and not the exception. . . . Many so-called "metropolitan" hospitals or institutions styled "medical centers" serve no more efficiently. Too often, the patient is fitted to the diet and the diet is not ordered and exhibited for the peculiar (often varying from day to day) needs of the individual.

Knowing Our Notables

One of the most signal honors that has ever been accorded a member of our Association was bestowed recently on *Mary A. Foley* when she was elected to the Permanent Staff of the Mayo Clinic. This honor has been accorded to but three other women, all of them physicians. Miss Foley did noteworthy service for her country during the war, when she was dietitian at Fort Riley, Kansas. Following this service, she went to the Massachusetts General and then to Rochester as dietitian for the Kahler Corporation. There she organized the dietary department and increased its staff in size from one to seven dietitians. Miss Foley is numbered among the pioneers in the giving of student dietitian courses, for in June, 1921, she developed a course for graduates of four year college courses majoring in foods and in the next ten years 110 young women were graduated. The course was discontinued in 1932. In 1921 the Rochester Diet Kitchen was opened, having for its aim the teaching and practical instruction of patients on special diets, or to quote Dr. W. J. Mayo, "to spread the food gospel." This Kitchen, which has received much favorable comment, serves from 60 to 90 patients, all of whom are on corrective diets. Since 1932 Miss Foley has been dietitian at the Mayo Clinic, giving two-thirds of her time to the Clinic and one-third to the Kahler Corporation.

Another distinguished member of the Association, *Frances Stern*, chief of the Food Clinic of the Boston Dispensary, and noted for her pioneer work in the domain of the food clinic, has recently been honored by an appointment as Fellow of the American Public Health Association. Miss Stern has a long and honorable history in the field of dietetics and home economics. A student of Mrs. Ellen H. Richards, she collaborated in the writing of Mrs. Richards' book on euthenics. She has published many articles on the subject of diet and her work in the food clinic, and did notable service as chairman of the Community Education Section of the American Dietetic Association.

A warm spot is reserved in the editorial heart for *Edith M. Barber*, who provided the refreshing pre-convention editorial on schedule for this May JOURNAL. Another is reserved for the contribution of *Ruth Pearson*, whose current comment offering is commended particularly for its citations of the literature.

A member of the Association who has bobbed up in this column before continues to keep things humming south of the Mason and Dixon line. We refer to *Fairfax Proudfit*, whose Tennessee State Dietetic Association is actively behind a lunchroom program, a series of lectures for the workers of the various agencies of city, county and state relief organizations, and is planning a course, as well, for public health nurses.

Notes on Our Notable Eaters

In general, a perusal of the JOURNAL's News Notes brings up entrancing visions of quantities of delectable food. For example, in this issue we learn that the California Dietetic Association's Bay Section not only provides dining rooms looking out on lakes, but dinners so good that after the "first course" everyone goes out and takes a boat ride around the lake, to return later to demolish six or seven more courses. Buffalo dines in regal state, and when a dinner is especially commendable the cook is graciously invited in to tell how he or she achieved such perfection. When the national president is a dinner guest here, nothing must do but a dinner of ducks, personally

bagged by the local dietetic Nimrod. No matter where they go, whether to Kart's dairy or the Georgian Room of the Hotel Statler, Buffalo dietitians eat, and in all languages. Georgia, keeping to the best Southern traditions, eats elaborately and late on Thursday evening, and awakens early and eager for a breakfast party Friday.

But the biggest hand goes to the Texas Association. The fact that this association is but an infant, at least in point of affiliation, does not deter its eating prowess. After "Southern Luncheons" (that *are* luncheons) they sample teas on scientific as well as scenic tours all over town, to be followed by "elaborate" buffet dinners. From this, nothing daunted, they struggle on to a dance (where wooden hatchets are souvenirs), and more food, to arise, still hungry, the following dewy morn and go on to "lovely" breakfasts. This is not the end, gastronomically, but the mind, to say nothing of the stomach, wobbles a bit here and we leave them in the middle of a heavy "Port of Houston" luncheon.

NEWS NOTES

General Association News. The president, Miss Comstock, has appointed the following Rochester, Minn., committee to be associated with Dr. Wilder of the Mayo Clinic in preparing an exhibit on diet for the diabetic, for the American Medical Association convention to be held in Atlantic City June 10 to 14, 1935: Mary A. Foley, Mayo Clinic, chairman; Ann Haines, St. Mary's Hospital; and Annette L. Mayer, Kahler Corporation. The St. Louis Exhibit Committee for the American Hospital Association meeting is made up of Edith R. Tilton, Barnes Hospital, chairman; Dorothy Duckles, Barnes Hospital; and Florence E. Levy, City Hospital.

American Red Cross. The many members of the Association who were in service in army hospitals during the World War, having previously enrolled for this service with the American Red Cross, and those who are now enrolled with the Red Cross, will be glad to know that the national headquarters office at Washington, D. C., has prepared a booklet refuting point by point the statements which appeared in an article attacking the American Red Cross, in an issue of the *American Mercury* during 1934. While there has been no particular attempt to publicize the distribution of these booklets, some have been printed for public distribution and are available on application.

Miss Lucy Minnigerode, Superintendent of Nurses, United States Public Health Service. Members of the A. D. A. who were privileged to know Miss Minnigerode will be grieved to learn of her sudden death at Washington, D. C., March 24, 1935. Miss Minnigerode organized the female nursing corps for the United States Public Health Service in 1919. At that time all hospitals now under the Veterans Administration, as well as Public Health Service hospitals, were under one head. In addition to her duties as superintendent of nurses, Miss Minnigerode handled the appointments of other female personnel, and has had jurisdiction over all dietitians in the Service. Dietitians who were transferred from the Army to the public health hospitals, and thus came under Miss Minnigerode's supervision, will remember her with affection and respect. During the years that followed after 1919 she always showed a keen interest and a warm personal friendliness toward dietitians. Miss Minnigerode was alert to assist in promoting professional standards for dietitians, and her death is a real loss. She was a native Virginian, and took her nursing training at Bellevue Hospital, New York City. One of the first American Red Cross nurses to volunteer for duty overseas, she spent a year in the Red Cross hospitals in Keif, Russia, where she was decorated by the Czar with the Cross of St. Anne. The Red Cross in 1925 awarded her the International Florence Nightingale medal.

Mrs. Boller. Announcement is made of the death of a loyal and ever-interested friend of the A. D. A., Mrs. Boller, mother of Anna Boller, on February 14. Mrs. Boller had been closely identified with the Association since the days when she gave the hospitality of her home to the business office of the Association, and through the years that have followed. Until recently, Mrs. Boller attended the annual meetings regularly, and she will be sadly missed by her many friends.

Dr. J. J. R. MacLeod. Dr. MacLeod, physiologist and codiscoverer of insulin with Sir Frederick C. Banting, died March 17, at the age of 58 years, in Aberdeen, Scotland. Dr. MacLeod was professor of physiology at Western Reserve University, Cleveland, from 1903 to 1918. In 1918 he went to the University of Toronto as profes-

sor of physiology and associate dean of the faculty of medicine. As a result of the discovery of insulin, in 1922, Drs. MacLeod and Banting were awarded the Nobel Prize in medicine.

Award in biological chemistry. The first Eli Lilly and Co. award of $1000 and a bronze medal has been awarded to Dr. Willard M. Allen of the University of Rochester, according to an announcement by the American Chemical Society on April 4. Dr. Allen received this honor for his work in the preparation and chemical purification of the hormone progestin. The presentation was to be made at the eighty-ninth meeting of the society, in New York City, April 22.

New York State Federation of Women's Clubs, Department American Home, sponsored conferences in March and April on "Today's Challenge to the Home." These conferences were held March 21 and 22 at Columbia University and April 4 and 5 at Cornell University. Speakers included Dr. Benjamin Andrews, Dr. L. Jean Bogert, Katharine A. Fisher, Dr. Flora Rose and Dr. Ruth Wheeler.

The May Day-Child Health Day project for 1935 was diphtheria immunization. The objective of the plan is to immunize all children between the ages of six months and six years, and to maintain this as a continuing service. Concerted action by State Departments of Health, the medical profession and parents would make the accomplishment of this objective possible.

Wine and Food Society. A group of epicures devoted to the fine points of food and beverages recently organized in Chicago at a dinner meeting attended by twenty-five men and three women. It is hoped that this disparity in the sexes does not indicate feminine lack of interest. Many popular American customs were taboo during the course of the dinner. Cold water as a beverage was one of these, also smoking, until coffee was served. Culinary heroes both past and present were toasted, including Brillant-Savarin and the dinner chef

Woman's College of the University of North Carolina. An announcement has been received from Margaret M. Edwards, head of the home economics department, that Anna M. Tracy, chairman of the Administration Section of the American Dietetic Association, will teach the courses in institution administration and institution buying in the summer school of the College. Courses in advanced dietetics and readings in nutrition will be given also. Another interesting feature of this summer session will be a curriculum study conference for vocational homemaking teachers, sponsored coöperatively by the State Department of Education and the Home Economics Department of the Woman's College.

Buffalo Dietetic Association. The October 1934 meeting was held in the Georgian Room of the Hotel Statler with an attendance of about fifty. The speaker for the evening was Mrs. Ethel Holmes Munsey who reviewed the political situation in Europe and then gave Eugene O'Neill's play, "Days without End." A buffet luncheon and social hour completed the evening.

The second meeting of the season was held at the Millard-Fillmore Hospital. Reports of the national convention at Washington were given by four members, who gave accounts of the addresses presented, personal impressions of the people they had met, and general impressions of the convention meetings and the trips to prominent hospitals. Following this, the program for the coming year was outlined, members were appointed as members of the nominating committee for the year, and a delicous luncheon was served.

The December meeting was an Assyrian dinner at an Oriental restaurant. About forty members were present. All enjoyed the various courses served. After the dinner, the artist who cooked it explained how the food was prepared.

The January meeting was held at Kart's Dairy. Mr. Kart, the owner, first took the guests through the dairy, explaining the filtration, pasteurization and cooling of the milk, and showing the machinery for these processes. Following the tour of inspection, members were taken to the reception room

where cards and delicious refreshments were enjoyed.

The February meeting was held at the Town Club. After enjoying a duck dinner, members were addressed by Laura Comstock, national president. Miss Comstock, in a charming and friendly manner, described details of the organization of the Association with which many members might not be familiar. Among other things, she told of questions which were being debated by the Association, why it takes a long time for new members to be admitted, and some new aims in the work of the Association. The meeting was well attended by Buffalo members and many from Rochester were also present.

California Dietetic Association—*Bay Section*. The November 1934 meeting was held in the Nurses' Recreation Hall, Letterman Hospital, San Francisco, with twenty-five present. The first speaker was a representative from Libby, McNeil and Libby, who described the new products this company is canning for babies and special diet patients. Jean Stewart then gave an interesting report of the American Dietetic Association convention at Washington, D. C. Special attention was called to the outstanding speakers and interesting trips. Following Miss Stewart's report, Eunice Barge of the University of California Hospital, sang four songs. After the program those present played bridge. Refreshments were served by Mrs. Lucy Collins and Lois Nelson, dietitians of Letterman Hospital.

In December the Bay Section met for dinner and a social meeting in the dining room of the Lake Merritt Hotel, Oakland. This hotel is on the shore of Lake Merritt and the dining room overlooks the lake. After the first course everyone enjoyed a boat ride around the lake, then returned to the dining room to complete the dinner. Twenty-five were present.

Los Angeles Section. The eighty-third meeting of this section of the state association was held at the Womens Athletic Club in November. Twenty-eight were present. Following dinner, Helen B. Anderson gave a report of the convention of the American Dietetic Association at Washington, D. C. The speaker of the evening was Dr. Howard R. Cooder, who talked on "The Ketogenic Diet, and Its Various Uses." Dr. Cooder spoke particularly of its use in epilepsy, pyelitis, allergy, malnutrition, enuresis, infections, nervousness and migraine. The business meeting was held at the conclusion of Dr. Cooder's paper.

The Section, as the guests of Dr. Helen B. Thompson and Dr. Verz Goddard, held their eighty-fourth meeting at the University of California at Los Angeles in December. Thirty-three attended. Before dinner members were conducted on a trip through the buildings and grounds of the University. They were shown, among other things, the animals which are used for experimental and research work. Dr. Goddard demonstrated the use of the oxy-calorimeter. Some of the students of the home economics department acted as guides and hostesses. A premedical student conducted the group through the biology building, explaining the work done there. Dinner was served in one of the dining rooms of Kerchoff Hall, after a trip through this beautiful building. Following dinner Dr. B. M. Allen gave a very interesting talk on "Current Research on Hormones." A short business meeting followed Dr. Allen's talk.

The Southern members of the Council of the California Dietetic Association held their mid-year meeting at the Womens Athletic Club in February. The Northern members met at the Hotel Whitcomb, San Francisco, in February.

The annual convention of the Western Hospital Association was held February 17–22 at the Hotel Whitcomb, San Francisco. On February 19 the Dietetic Section of the Western Hospital Association convened. Among the interesting speakers were Dr. Agnes Fay Morgan who spoke on "The Present Status of Vitamin D"; Dr. Nina Simmons, on "Nutrition and Dental Hygiene"; Dr. Ruth Okey on "The Quantitative Aspect of the Vitamin Supply"; and Dr. B. W. Black, medical director, Alameda County whose subject was "The Dietitian as an Administrator."

The Chicago Dietetic Association elected or re-elected the following officers and chairmen of its executive committees for the year 1935: president, Kathryn McHenry, Edward Hines Hospital, Hines, Ill., re-elected; vice-president, Beulah Hunzicker, Presbyterian Hospital; Secretary, Mrs. Carol Saphir, University Clinics, re-elected; treasurer, Sue Head, Michael Reese Hospital, re-elected; membership, Laura Vial, La Grange, Ill.; publications, Avis Wildenrodt, Cook County Hospital; publicity, Elsbeth Hennecke, Presbyterian Hospital; and revisions, Margaret Cowden, Michael Reese Hospital. Beulah Hunzicker later resigned as vice-president, as she had accepted a position at Ann Arbor, Michigan. Margaret Cowden was appointed vice-president, and Mary McKittrick, Mercy Hospital, chairman of the revisions committee.

The speaker for the January meeting was Dr. Campbell of Presbyterian Hospital, whose subject was "The Value of the High Protein Diet in the Treatment of Obesity." The February meeting was dispensed with as the annual dinner was held March 1, when Dr. Herman Bundesen, the commissioner of public health, addressed the group on "Food as a Public Health Problem." The March speaker was Nellie Hawkinson, chairman of the department of nursing education at the University of Chicago, who spoke on "Dietetics in the Education of the Nurse." The month of April was marked by a card party held at Henrotin Hospital, with Blanche Joseph as chairman of arrangements, and a joint meeting with the medical social workers. Helen Beckley, director of social work at Cook County Hospital led the discussion which dealt with the problems of the dietitians, nutritionists and medical social workers.

The Association has been invited by the Illinois Dietitic Association to attend the meetings of the Tri-State Hospital, Dietetic, Nurse's, etc., convention to be held at the Sherman Hotel, May 1–3.

District of Columbia Dietetic Association. Representative William I. Sirovich of New York, who collaborated in the authorship of the Pure Food and Drugs Act, was the dinner speaker at the February meeting held at the Dodge Hotel Garden House.

An attractive program of mountain music, consisting chiefly of ballads, was furnished by The Hay Shakers, led by Tony Alderman.

Mary Barber was a Washington visitor in February.

The Georgia Dietetic Association held its third annual meeting at the Piedmont Hotel, Atlanta, February 15. Laura Comstock and Anna M. Tracy, dietitian, Florida State College for Women and chairman of the Administration Section, A. D. A., were the special guests.

Thursday evening the Atlanta association gave a valentine party in honor of Miss Comstock at the Henrietta Eggleston Hospital for Children. The following morning a breakfast party was given by Jessie Harriss at the Emory University Hospital. The remainder of the morning was devoted to personal conferences with Miss Comstock. At the executive luncheon local problems were discussed.

At the business meeting, Lucia Hunt, president, Georgia Dietetic Association, presided. Judging from the reports of the various committees the activities during the past year have not been so limited as the membership would seem to indicate.

Clara Lee Cone, home economics supervisor, Atlanta public schools, presided at the afternoon session when Catherine Newton, home economics professor of the University of Georgia presented the "Professional Advantages Derived from A. D. A. from the Teacher's Viewpoint." Anna M. Tracy gave an informative paper on the "Administrative Dietitian" and Miss Comstock briefly discussed "A. D. A. Activities."

In the evening an informal dinner was served after which John M. Slaton, Jr., manager, Veterans' Hospital, welcomed the guests and introduced the speaker of the evening, Miss Comstock, who discussed "The Role of the Dietitian in a Business Concern" in a most interesting manner.

The Georgia association wishes to express its appreciation to Miss Comstock for com-

ing to the meeting. Her presence was not only a great pleasure but a source of inspiration to this newly affiliated organization.

The new officers elected were as follows: president, Jessie Harriss, Emory University Hospital, Atlanta; vice-president, Gladys Stoddard, University Hospital, Augusta; secretary, Peggy Dodderidge Newsom, Atlanta; and treasurer, Marie S. Echols, State Hospital, Milledgeville.

Greater New York Dietetic Association met jointly on January 25 with the Home Economics Association of Greater New York and the Southeastern District, and the New York Nutritionists for a very interesting program with the following speakers: Dr. Mary Swartz Rose, "Child Nutrition from the Modern Point of View"; and Marjorie Heseltine, "Nutrition Work for FERA."

Under the chairmanship of Mrs. Elsie Strahan, vice president of the Greater New York Dietetic Association, a successful party was held at the Waldorf Astoria on January 18. About three hundred members enjoyed bridge or dancing and a substantial amount was added to the treasury.

Dr. William P. Murphy, who with Dr. George P. Minot and Dr. George H. Whipple received the 1934 Nobel Prize for his researches in anemia, was the speaker and honored guest at the annual meeting of the Association at the Waldorf Astoria on February 8. Dr. Murphy's talk on pernicious anemia, which will appear in full in this JOURNAL, was illustrated by a moving picture showing the outstanding results that he has achieved, and was thoroughly enjoyed by about eight hundred members and guests of the association.

Sixty members enjoyed a delightful dinner for Dr. Murphy, preceding the meeting.

At the March meeting of the Association, S. Margaret Gillam spoke on "Food Cost Accounting" and Gwynne Ross, occupational consultant, American Women's Association, spoke on "What Next in Women's Work?"

Dr. Mary Schwartz Rose was a guest of honor at New York City's Tribute Dinner to twenty-five career women, held during National Business Woman's Week in March. The dinner was sponsored by the New York League of Business and Professional Women, with more than fifty coöperating organizations. Dr. Rose represented the profession of dietetics. The Greater New York Dietetic Association reserved a table for the dinner.

The April meeting was held April 1 with the following speakers: Dr. Warren M. Sperry, "Nature and Metabolism of Fatty Substances"; Dr. David Dulsker, "Biological Physiology of Obesity." At present, a new constitution and by-laws are being submitted to the membership. At the April 17th dinner meeting the subject of the "robot kitchen" was presented and the dinner served was "one typical of the robot kitchen."

Maryland Dietetic Association. The February meeting was planned to appeal to members who are interested in interior decorating as it refers to the home rather than the human body. Mr. Paul Babcock of Benson Company, Baltimore, discussed the modern ways of decorating and displayed samples of upholstery for illustration.

In March, Bertha Wood, who is spending the winter at the Dodge Hotel, Washington, D. C., spoke to us on "Where Are We Going?". She told of the beginning of the dietary work, when workers were first known as visiting housekeepers. We were urged to develop whatever field we were in, giving freely of ourselves, and helping to continue the development of the science of dietetics. Miss Wood is the author of "Foods for the Foreign Born," and is known especially for her work at the Boston Dispensary during the World War. After Dr. Joslin and others had entered the service, she opened the clinic, beginning with only one room.

Mary Qwatkin has accepted a position at the Lima State Hospital, Lima, Ohio. The vacancy at the Springfield State Hospital, Sykesville, has been filled by Margaret Halloway of Baltimore, a recent graduate of Drexel Institute.

Massachusetts Dietetic Association. The February and March meetings were devoted to diet therapy lectures. In February, Dr. Priscilla White of the Joslin Diabetic Unit spoke on "Diabetic Children" and in March,

Dr. Louis Diamond, associate physician, Children's Hospital, gave a talk on "The Effect of Diet on Anemia."

Jean Hood has resigned as dietitian at the Truesdale Hospital, Fall River, Massachusetts, to accept a position as assistant professor of nutrition extension at Pennsylvania State College. For the past year Miss Hood has been chairman of the Diet Therapy Section of the Massachusetts Dietetic Association.

Marion Floyd of the Massachusetts General Hospital has recently added another dietitian to her staff. Irma Feinberg, a graduate of Florida State College for Women and the Massachusetts General Hospital student dietitian course, has taken over the accountancy of the food store and is working on recipe costs for the dietary department.

Mrs. Dorothy Prentiss Polack, formerly dietitian at McLean Hospital, Waverly, is now living in New Orleans and is a consultant dietitian for the medical profession of the city.

The Milwaukee Dietetic Association has had the following officers this past year: president, Ethel Milzer Keating; vice president, Katherine Lambert; secretaries, Mary Van Hecke and Dorothy Conley; treasurer, Anita Gehl; chairman, Program Committee, Margaret Davis; chairman, Membership, Lucy Davis; historian, Nell Clausen; and chairman, Publicity, Alice Brenckle. The program this year included two scientific lectures, one by Dr. Roy Greenthal on infant feeding, and one by Dr. E. Jacobson on the use of the ketogenic diet in kidney infections. Rabbi Joseph Baron also gave an interesting talk on Jewish dietary laws. The association gathered at the home of Alice Brenckle in December for a Christmas party and visited the Gridley Dairy in January and heard an instructive talk on ice cream.

Lucille Sverdlin, formerly dietitian at Mt. Sinai Hospital, has resigned her position to become affiliated with the Milwaukee Department of Outdoor Relief. Frances Leary, who has been assistant dietitian at St. Joseph's Hospital for the past two years, is now chief dietitian at the Carle Memorial Hospital, Urbana, Illinois. Frances Kelly from St. Joseph's Hospital, Mishawaka, Indiana, is the new staff dietitian at the Veterans Hospital, taking the place of Mildred Thom who was promoted to chief dietitian at the Veterans Hospital in the Bronx, New York City.

The Minnesota State Dietetic Association. Gertrude Smith, in charge of the Twin City unit of the National Dairy Council, spoke on "Health Education," and Agnes Teigen, nutritionist with the State Emergency Relief, discussed "Special Diets in State Relief Work," at the March meeting, arranged by the community education section. The sixth annual dinner meeting was held at the Groveland Hotel, Minneapolis, April 1. The guest speaker was Dr. George Conger of the department of philosophy, University of Minnesota, who gave an interesting talk on "Getting Acquainted With India." Ethel Heaberlin, dietitian at Midway Hospital, St. Paul, entertained with songs

Hope Hosmer, assistant dietitian at Bethesda Hospital, St. Paul, and Betty Irwin, staff dietitian at U. S. Veterans' Hospital, Fort Snelling, are new members of the association.

Hazel Brown, dietitian at Vocational Hospital, Minneapolis, has been appointed superintendent of the hospital.

The following account of "Food Problems Class Planned," appeared in *The Rochester Post Bulletin* regarding the work that some of the dietitians are doing. Annette L. Mayer is Chairman of the group:

"The second series of food problems classes will be conducted one day each week in the community room of the city hall under the joint auspices of the Y. W. C. A. and the ERA.

Dietitians associated with the Mayo clinic and the Kahler hospitals will conduct the classes which are to meet each Thursday at 2:30 p. m. The first meeting will be next Thursday. The dietitians who will be in charge are Miss Annette Mayer, Miss Mary Foley, Mrs. Thomas O'Shaughnessy, Miss May Herrman, Miss Mildred Young, Miss Jeannette Owens, and Miss Edna Edwards.

The first program will be 'Meal Planning, an Art and Science.'

For the second program, Ben Dunn of the Rochester High School will conduct the meeting on 'Gardening, a Means of Balancing Our Food Budget.'

The remaining meetings will consist of 'Building Foods: Milk, Eggs, Cheese and Meat,' 'Importance of Cereals in the American Dietary,' 'Fruits and Vegetables, a Source of Vitamins and Minerals,' 'Further Guides to Food Thrift.'

Recipes and practical cooking demonstrations will be included for each program and all meetings are open to the public, with every Rochester housewife urged to attend."

The Nebraska Dietetic Association has been accepted as a national affiliated group. The officers elected are: president, Vesta Davis; vice-president, Myrtle L. Donahoo; secretary, Nell Trenkle; and treasurer, Elvira Anderson. Section chairmen are: diet therapy, Leta B. Linch; professional education, Martha Park; community education, Rebeka Gibbons.

The program for this year's activity will be directed chiefly toward a furthering of organization and increased membership.

New Jersey State Dietetic Association. Mary Murphy has resigned as dietitian at Valley View Sanatarium in Paterson. On April 15 she began her new duties at Seton College in South Orange where she will reorganize the dietary department.

Anne Smith is now dietitian at Irvington General Hospital. She comes to Irvington General after a year as dietitian at Bergen Pines.

Margaret Walker, a graduate of the New Jersey coöperative course for student dietitians, who has been located at Haddon Hall, Atlantic City, is now an assistant dietitian at Cooper Hospital, Camden.

Nelle Shepherd, another graduate of the New Jersey course who substituted as dietitian at Hillview Farms, Washington, Pennsylvania, is now assistant at Sheppard and Pratt Hospital in Towson, Md.

Sara Frizzell, who has recently completed the New Jersey course, will live in New York until the summer. She is studying at Columbia and will complete work for her Master's degree this spring.

Jean Allison who completed the New Jersey course last September is living for the present with her brother and his family in New Brunswick.

Pearl Grove Riegal, formerly assistant dietitian at Orange Memorial Hospital is now Mrs. Stark and living in Scranton, Pennsylvania.

Enrolled in the New Jersey coöperative course at the present time are Virginia Cheney from Drexel; Gertrude Gaede from Beaver College; Agnes Oettlé and Alice Jané from New Jersey College for Women; Margaret Vye from Acadia University and Dorothy Young from Florida State College.

Gertrude Gaede as a member of the Student Dietitians' Club was master of ceremonies at the Birdseye Frosted Foods Dinner given at the Hotel New Yorker in December. The Club is for student dietitians enrolled in courses in and around New York and holds monthly meetings.

The social evening sponsored by the state association on February 27 at Newark Beth Israel Nurses' Home proved to be a most enjoyable affair. About 55 persons braved the slippery weather to attend. Bridge and other games were played with prizes for the lucky winners. A delicious buffet supper was served during the evening.

Geraldine Parry, therapeutic dietitian at Hackensack Hospital, is coöperating with Dr. Knowles, also of Hackensack Hospital, in the preparation of an exhibit of special diets for a meeting of the New Jersey Medical Association to be held in Atlantic City the latter part of April.

Placement Bureau Registration Fee. The Business Office announces that registration with this Bureau is two dollars, instead of three dollars, as previously.

The New York State Dietetic Association. As the JOURNAL goes to press, a tentative program for the state meeting to be held at the Waldorf Astoria Hotel, New York City, May 2 to 4, promises the following speakers: Dr. Ruth Wheeler, "A Study of the Eco-

nomic and Nutritive Value of the Rations at Vassar College"; Dr. Joseph Harkavy, "Allergy"; Dr. Mary Swartz Rose, "Vitamins"; Dr. H. J. Stander, "Metabolism in Pregnancy"; Alice McCollister, "The Unconquerable Will of Mankind"; Hendericka Rynbergen, "Nutrition Teaching Program for Student Nurses in the Small Hospital." Other speakers, according to Grace Carden, president of the Association, include Dr. John L. Rice, Commissioner of Health, New York City; Mrs. Frances Gannon, Department of Markets, New York City; Mrs. Rebecca Hutcuff of the Waldorf Astoria Hotel; Dr. Eugene F. DuBois; and Laura Comstock. Group luncheons are scheduled for May 3, with Adeline Wood as chairman. The State Association are to be guests of the Greater New York Association at tea in the Le Perroquet Suite, Waldorf Astoria, with Lenna Cooper as hostess, assisted by officers of the Association.

The Pennsylvania State Dietetic Association. The third annual convention will be held May 8, 9 and 10 at the Bellevue Stratford Hotel, Philadelphia, concurrently with the Hospital Association of Pennsylvania.

The program is being planned to cover the interests of the four section activities—administration, diet therapy, professional and community education, together with a joint meeting with the Hospital Association of Pennsylvania when subjects of particular interest to hospital administrators and dietitians will be discussed.

The educational, together with nearly 65 commercial, exhibits, many of which will be of particular interest to home economics graduates and students, will be open from 9 A.M. to 5 P.M.

Graduates of home economics schools who are not members, students in home economics schools and those taking post graduate courses in hospitals are invited to register as guests. Registration fee for graduates will be one dollar and for students fifty cents.

The Texas Dietetic Association was organized at the Lamar Hotel in Houston on February 22 at a state assembly called together by Mary E. Smith, chief dietitian, Memorial Hospital, Houston. The following officers were elected: president, Mary E. Smith; vice president, Lottie Crecelius; secretary, Irene Pope Hardy; treasurer, Juanita Douglas.

The South Texas Dietetic Association, composed of dietitians from Houston and Galveston and of which Mary E. Smith is president, had arranged a most interesting and enjoyable program for the two-day meeting. A. Louise Dietrich R.N., secretary, Texas Graduate Nurses Association, who was to have given an address on "The Dietitian and the Nurse" was detained in Austin and could not be at the meeting. Mrs. Helen S. Swanson, dietitian consultant Texas Relief Commission, conducted a discussion on "The Dietitian's Place in the Texas Relief Program." She explained the various phases of Texas relief work and how dietitians in other fields can coöperate and aid in the relief program. Mrs. Swanson's discussion was followed by the "Southern Luncheon" held in the Spanish Dining Room Lamar Hotel. After the luncheon a round table discussion on "Selective Menus" was conducted by Lottie Crecelius, chief dietitian. Baylor University Hospital, Dallas.

The afternoon of the first day was devoted to "Trips of Interest in Houston" and included visits to hospitals, the "Port of Houston" and a scenic tour of the city. Irene Pope Hardy was hostess at a delightful tea at the Cohen House, Rice Institute.

In the evening the dietitians were the guests of the Borden Produce Company at an elaborate buffet dinner held in their plant and later enjoyed going through the dairy which has only recently been completed and is a model of sanitation and equipment.

The first day of the meeting ended with a unique dance held at the Herman Park Club House. Mamie Ruth Harris and Gladys Lyons, the hostesses, were dressed in beautiful colonial costumes. Wooden hatchets marked with the date of the convention were distributed as souvenirs.

The second day of the meeting was opened most auspiciously with a lovely breakfast at the Memorial Hospital where Mary E. Smith and Blake Bryson were hostesses.

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The visiting dietitians also enjoyed seeing the well-organized dietary department over which Miss Smith has supervision.

The following addresses comprised the second day's program: "Simple Chemical Facts and their Relation to the Selection and Care of Kitchen and Dining Room Equipment", A. J. Hartsook, Ph.D. assistant professor, Chemical Engineering, Rice Institute; "Recent Advances in Institution Equipment", Mozelle E. Craddock, manager and dietitian, dormitories, Texas Technological Institute, Lubbock; "The Allergic Phases of Chronic Arthritis", Alvis E. Greer, M.D., Greer Park Clinic, Houston.

The "Port of Houston" Luncheon was a delightful affair following the morning program. After the luncheon Mr. Robert Jolly, President of the American Hospital Association, conducted a round table discussion on "Per Capita Cost of Meals."

In the afternoon a bus trip was made to Galveston and the Marine and John Sealy Hospitals visited. The dietitians had the pleasure of being guests at tea in the beautiful new nurses' home at John Sealy Hospital where Clara Matthes and Helen Seago were hostesses.

A formal dinner in the Lounge Room of the Lamar Hotel concluded the two day program. Dr. Jet Winters, professor of home economics, University of Texas, gave a very interesting address on "Foods, Fads, Fancies."

This meeting was attended by 53 dietitians, of whom 23 were active and two were associate members of the American Dietetic Association. All parts of Texas were represented and much interest was displayed. Visiting dietitians will long remember Houston as the scene of the organization of the Texas Dietetic Association, and the members of the South Texas Dietetic Association for their gracious hospitality.

The Tri-State Dietetic Association. The Alabama Dietetic Association met at Alabama College in January with Lois Ackerley, Anna Irvin and Blanche Tansil as hostesses. Dr. Lois Ackerley, director of the school of home economics, talked on "Psychological Information the Dietitian Needs." Plans were made for a large group to attend the Tri-State meeting in Nashville in February. On March 29, the association joined with the state home economics association in bringing Dr. Henry C. Sherman to Birmingham. Dorothy Scott Moschette led the discussion following Dr. Sherman's talk on food and health.

Blanche Tansil, associate professor of home economics at Alabama College, has been granted a leave of absence to accept a position with the Tennessee Valley Authority as assistant food technologist. Her work will consist of developing new and approved uses for Southern food products. She is located at the Home Economics Building at the University of Tennessee.

The Knoxville Local Dietetic Association met at the Home Economics Building of the University of Tennessee on February 1. This was the first meeting since organizing in December. Mrs. Lois Gentry, nutritionist for the Knox County Relief Administration, spoke on "The Work of a Nutritionist in the Relief Program." There were thirty-nine members present. Dr. Florence MacLeod is president, Elizabeth Pope, vice-president, Evelyn Hamilton, secretary and Catherine Cotham, treasurer. Plans were made for a large group to attend the Tri-State Dietetic Meeting in Nashville on February 16.

The annual tri-state dietetic convention was held in Nashville, Tennessee, February 16, with the Tennessee Association as hostesses. All the states in the South were invited to attend. The tri-state group has now been dissolved, and each of the three states have been affiliated, as a separate group, with the national association.

Washington State Branch of the A. D. A. The members in Seattle have had numerous opportunities to get in touch with the many varied nutrition and home economics activities throughout the community and county.

At the January general state meeting, Lena Osterud gave a report of her trip to the national A. D. A. convention. Dr. Jennie I. Rowntree of the University of Washington dietetic department spoke on "The Newer Trends in Nutrition." The national A. D.

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It is our purpose to publish in this journal every month the facts about some phase of canned food knowledge. We would like to summarize for your convenience the conclusions which authorities in nutritional research have reached.

And here we ask your help. On this page are listed a few suggested subjects. Will you check the ones that you would be interested to read, and write in others that may occur to you? Then simply cut out the bottom part of the page and mail it to us.

We want to make this service valuable to you. Your suggestions will help us.

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A. collection of material on "Food Fads" and also a local collection were displayed.

The March meeting of the entire state group brought to light some of the nutrition work of the state and county relief organizations. Ruth Fitz Simons, the state director of social service under the WERA told of the work of her department. Mary Brakel of King County Hospital and Leota Anderson of county relief told of the aid needy ambulatory therapeutic diet patients are receiving. Ruth Walker, head of home economics in the public schools, told of the educational program sponsored by home economics in her organization.

A number of members of our group attended the Spring meeting of the Western section of the State Home Economics Association at Everett, Washington, on March 9.

Many of the dietitians have taken advantage of the invitation of the Home Economics Women in Business to meet with them every Monday night during a series of lectures and field trips through various commercial houses. These trips have included visits to tea and coffee houses, flour mills, meat packing houses, hotel and restaurant supply houses, etc.

The May meeting of the association will be held in Tacoma. Dinner will be served and officers will be elected for the coming year.

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Pears (Bartlett)	6%
Pineapple (Sliced)	12%
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Fruit Combination	9%

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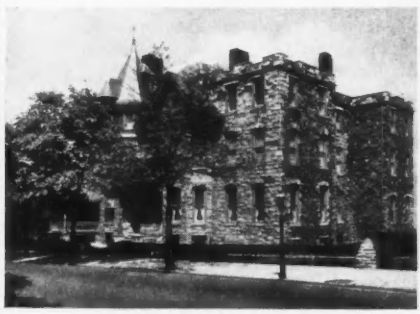

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BOOK REVIEWS

Dietetics for the Clinician, 2nd Edition. By Milton A. Bridges. Philadelphia: Lea and Febiger, 1935, pp. 994. Price $10.00.

That a second edition of this volume has followed so soon after the first, indicates something of its worth. The first edition was reviewed in this JOURNAL for November, 1933, p. 325. In this latest edition much of the subject matter has been augmented and rewritten; in particular the sections on physiology and chemistry of digestion, vitamin factors in diet, selection and preparation of foods, allergic diseases, dentistry, tuberculosis and pediatrics have been rewritten and amplified in accordance with more recent investigative work. New material on food adjuncts has been added. Menus have been amplified and more recent data incorporated. The appendix has been enlarged to contain all "reliable" analyses of common and proprietary foods. In keeping with the times, a modern table of analyses of alcoholic beverages has been included. Louise Schutz, M.S., assisted in the section on food adjuncts, while Dorothy M. Stephens, B.S., prepared the section on selection and preparation of foods. This is a most attractively bound, useful and complete treatise on diet therapy.

The Popular Practice of Fraud. By T. Swann Harding. New York: Longmans, Green and Co., 1935, pp. 376. Price $2.50.

In his introduction, Mr. Harding tells of the beginning of the "pure food law" under the sponsorship of Dr. Harvey Washington Wiley (thanks for the middle name); the development in 1927 of a "purely regulatory unit," the "Food and Drug Administration," under its present chief, Mr. Walter G. Campbell; the rise of consumer revolt, typified in popular journalistic burlesques of American advertising and in the organizing of Consumers' Research; and the final (to date) penultimatum in the shape of a revised food and drug law inspired by Dr. Tugwell and lost in the 1934 session of Congress.

The writer then details the type of seductive advertising which now awaits the gullible consumer, and how this gullibility has been kept alive since the first recorded prescription for a hair grower was made in 3400 B.C. Mr. Harding offers bountiful evidence that "sucker-trapping" is not entirely an American sport. It is a universal pastime.

With great agility the author leaps from vacuum caps which induce the diffident and "bashful hair out of its roots," to worthless cod liver oil tablets, nose adjusters, and the well publicized "lift" from the helpful Camel. He then assails the fear school of advertising, from "B.O." to "dated" coffee. The book-selling successes of the Messers. Alfred McCann and Kallet and Schlink are due to this same "scare-the-consumer-out-of-his-wits" technique. Mr. Harding mentions other things that are dangerous to man, to wit: automobiles, fires, grade crossings, insects and women; yet man cannot live without taking some risks. To say that smoked ham, bran, and vegetable-fat shortening are "deadly" is as unfair as the lower forms of misleading advertising propaganda. The sulphur dioxide, sodium benzoate, fruit and vegetable spray scares are likened to the "hell-fire campaigns" against aluminum cooking ware.

In his chapter on the public health menace of frauds, Mr. Harding attacks such "fatuous fetishes" as excessive colon laundering, acid stomach interests, and sex rejuvenating. A horrifying array of obesity, diabetic and cancer cures are detailed. The absurd "reducing" and "health" claims for mayonnaise, grape juice, molasses, "Basy Bread," and honey are recounted. As Mr. Harding says, "a formula given to me by an old Indian on his deathbed" sells much better than senna or Glauber's salts; and a dime's worth of Epsom salts gotten up fancifully as "Kruschen Salts" and selling for 85 cents, will make grandpa turn cart wheels, remove his uric acid, and fill the old codger with vim and vigor.

But the lure of food and drug claims pales before that of cosmetics. Here we have "youthifying herbal masks," "magic turtle creams" and various other skin games in the

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Announcement—This Company has a reputation (earned, we hope) for publishing books only of the most sober and upright character. We have worshipped at the shrine of the great god Authenticity. Fiction has been beneath our snooty notice.

We now unbend. We announce our first book of fiction. But observe, this is no ordinary book of fiction. It is *fantascience*—i.e. while it is fiction in good earnest, to be read solely for the fun to be derived from it, written not to inform, or to instruct, or to strike dead in debate, but for the romance of the thing, nevertheless the romance is not mere flight of fancy. If the future is prognosticated, it is a future with seedlings in the present; the author has not gone beyond the bounds of present knowledge. Fantascience is written by and specifically for scientists.

Before the Dawn

By JOHN TAINE [Eric Temple Bell, Professor of Mathematics, California Institute of Technology]

YOUNG Langtry, engaged in a routine television experiment stumbled upon the basic discovery that made possible the Langtry electronic analyser.

By means of it any object however ancient or long-buried may be accurately dated. Hence the popular name "Langtry clock."

By means of it also, just as a phonograph needle makes possible the projection of sound, the device applied to any object will reproduce the scenes that have taken place before that object.

Before the Dawn describes those projections. They are, mind you, no two-dimensional affairs but diffused in three. The narrator walks in the very midst of the scenes. We are shown the teeming life of the saurians, nature in one of its grand rages of volcanic eruption, of disappearing seas and continents; we see the struggle for existence as it was in the Mesozoic, and the dying gasp of the great reptiles in a gorgeous climax—all, by the literary device, literally through the sensations of an eye-witness.

Fantascience is so unlike ordinary fiction that you probably won't find copies in the corner bookstore. Better order from the publisher. Remember—*fantascience* is by a scientist specifically for scientists.

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beauty racket—two billion dollars a year, the price; universal pulchritude, the goal.

In the chapter on truth in advertisements, the lay press and certain second or third class medical publications are flayed, followed by a chapter on the testimonial racket in advertising, so socially acceptable today. That there are boomerangs in business billingsgate, Mr. Harding believes, citing the stale coffee peril, the baking powder bickering and the gelatine controversy.

The economic waste of much current advertising is cited. Crazy Water Crystals' advertising appears extensively in newspapers, blares forth in a house organ accurately labeled *Crazy News*, and whines out of the radio; all to the end that a composition of Glauber's salts (a good, stiff purge for horses and cows), washing soda and Epsom salts, etc., may be sold for $1.50 to wishful thinkers. But bottled psychotherapy, so well exemplified in Lydia (coiner of "Woman is the architect of God's noblest work") Pinkham's elixir, perhaps, in a sense, is worth the price. Even the barnyard birds and animals fail to escape fraud. Fraudulent remedies for hog cholera, contagious abortion, mange, etc., abound.

The writer tilts at free-lance reformers, whose guinea pig similes frighten, often without foundation on fact. The aluminum utensil, electrically refrigerated food, bleached flour, ether and ergot phobias have been some of the results of their misguided zeal. This is a thought-provoking, comprehensive work on the "popular practice of fraud."

Your Guide for Buying, Preparing and Serving Good Meals at Low Cost. By the Massachusetts Department of Public Health, 1934, pp. 23.

This is another useful guide for low cost planning. It combines an excellent buying guide and sections on meal planning in a nutshell, grocery orders for families of one to ten, cold weather meals, hot weather meals and recipes. Loose leaf pages with a week's grocery order for from one to ten persons are included. The *Guide* has been endorsed by the Massachusetts Department of Public Welfare.

Diabetes, How to Make it Harmless. Issued by Committee on Diabetes, The Minnesota State Medical Association, Saint Paul, 1934, pp. 47.

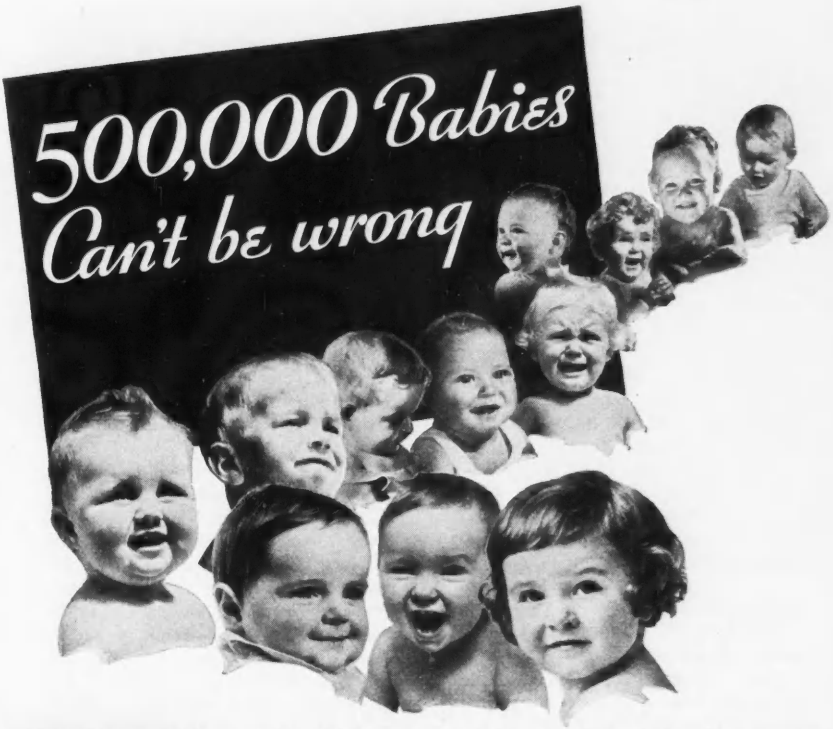
This little booklet offers helpful information for the diabetic. A variety of type diets are offered, both for children and adults. Sections are devoted to food facts, substitutions, the customary urine tests, the uses of insulin, care during sickness, and complications in diabetes. This booklet was prepared by a joint committee of doctors and dietitians, headed by Dr. Wilder and Mary Foley, and is distributed only by the doctors of the State of Minnesota. Several diets were worked out with substitutions in order to bring costs down to a suitable level for families of low income. Market lists, based on these diets, have been prepared for the use of relief offices, under the direction of Inez Hobart, extension nutritionist for the state ERA.

Good Food at Low Cost. By R. T. Devereux. West Chester, Pa.: Chester County Medical Society, 1934, pp. 38. Price 20 cents.

This compact and useful pamphlet includes a simple discussion of nutritive requirements and methods of securing these on limited food budgets, suggestions for box lunches for the school children in the family and a number of recipes for nourishing and inexpensive dishes with menus for four weeks.

Manual of Diets. Compiled by Kate Daum, Ph.D. Iowa City: Iowa Supply Co., 1934, pp. 50. Price 60 cents.

This is a complete compilation of diets and pertinent related information prepared by an authority in the field. The new edition of this manual is one of the most generally useful of the diet manuals available. Avoiding procedures which would make it of local value only, it still includes all of the usual, established dietary routines. These are grouped according to modifications in consistency, in energy content, and in individual constituents with indications as to their use.



It doesn't take a baby long to demonstrate the success of any feeding program. He says it in pounds and inches, in firm flesh and sound bones . . . as well as in contented gurgles.

Hundreds of thousands of babies have stamped their "O.K." on Gerber's Strained Vegetables prescribed by their physicians . . . have grown and thrived on these extra-quality foods, scientifically prepared.

This year's infants will find Gerber's more than ever to their liking. Physicians will approve them even more heartily. Mothers will be increasingly enthusiastic. For now Shaker-Cooking (a revolutionary process exclusive to Gerber's) gives new advantages.

By stirring the foods during the processing in sealed cans, Shaker-Cooking shortens cooking time as much as 60%. Results: (1) finer flavor; (2) better color; (3) adequate sterilization without overcooking; (4) uniform cooking throughout can.

Gerber's Strained Vegetables are grown and harvested under the company's own supervision. Air is excluded throughout precooking, straining and canning—to conserve vitamins in high degree. Moisture regulation reduces loss of minerals. Straining is through monel metal, with openings five times as fine as kitchen sieves. Now Shaker-Cooking adds new appetite appeal to time-tested nutritive values.

If you are not yet familiar with the new Gerber Shaker-Cooked Foods, we will be glad to supply you with samples. Use coupon.

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Strained Vegetable Soup . . . Tomatoes . . . Green Beans . . . Beets . . . Carrots . . . Prunes . . . Peas . . . Spinach . . . Cereal . . . 4½-oz. cans.

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Please send me ☐ Reprint of the article: "The Nutritive Value of Strained Vegetables in Infant Feeding." ☐ New Process Samples.

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Diet Manual. Philadelphia: Mount Sinai Hospital, 1934, pp. 73.

This is a collection of mimeographed diets, in loose leaf form, intended to act as a guide to the physician ordering diets and to the dietitian or nurse filling diet prescriptions. They are not intended to limit in any way the individual prescription diet, but are to serve as a guidance in its formulation. Simple directions for insuring an adequate diet, sample menus for a variety of special diets and general diets, are included. Ten gastrointestinal diets are listed for a variety of conditions. Graduated reduction diets appear. The diabetic section includes classification of foods; lists of substitutions; typical foods in household measures with accompanying protein, fat and carbohydrate content; and a variety of sample menus. Other diets include the ketogenic, nephritic, cardiac, high caloric, etc.

No Food with My Meals. By Fannie Hurst. New York: Harper and Bros., 1935, pp. 56. Price $1.00.

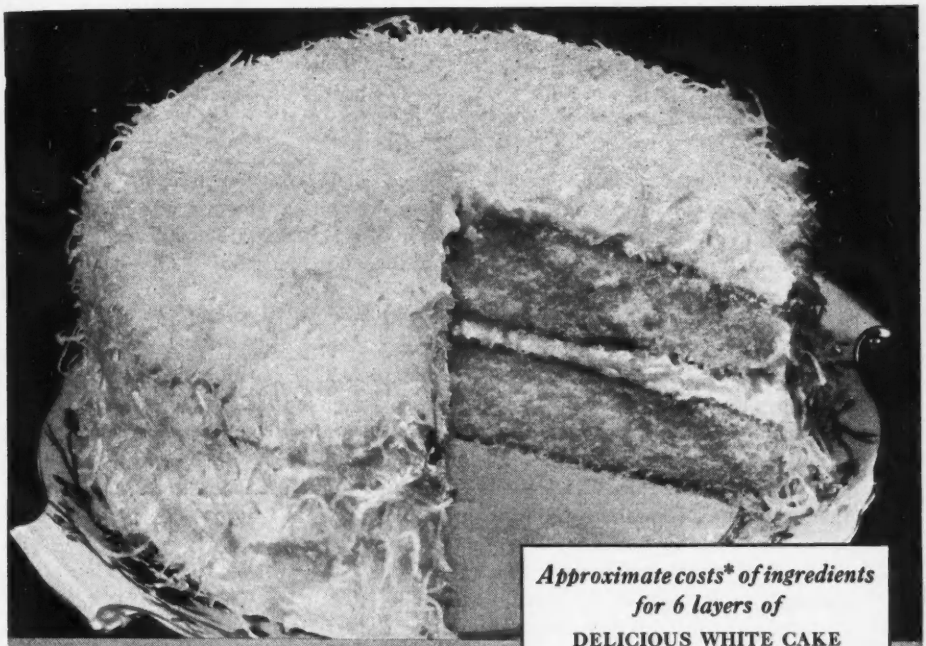
This reviewer has come to look with misgivings on dietary treatises by non-professionals. However, Miss Hurst's book can be commended as a graphic, delightful and unmisleading portrayal of one woman's quest for slimness. She is to be congratulated for her acumen in having looked with suspicion upon the many freak reducing diets, and for having put herself in the hands of a reputable physician. She early learned that food makes fat, that "metabolism is something that you surrender with a clothespin on your nose," and that in most instances glandular alibis or pathological peculiarities do not exonerate one of her overweight. Sadly enough she learned, after long denial, that she had lost even her capacity to regret not having the savory dish of flapjacks, the marron glacé and the marzipan. Her book should reach shoals of those who snatch at bait for "banting;" it will impress them with the dangers and fallacies inherent in short-cut food fads, in dietary regimes other than the physician's prescribed one, and in the rolling pin, pineapple and lamb chop, group of fantasies for the fat. Many of her aphorisms will bear repeating, such as, "A plump debutante in the family is more of a problem than a mental delinquent [sic]."

The Vitamins, chart by Victor E. Levine, M.D., Ph.D., Dept. of Biological Chemistry and Nutrition, Creighton University School of Medicine, 1934.

Here is a graphic portrayal of the story of the vitamins in chart form, useful for quick reference.

Nutrition Charts. A set of 11 black and white charts, each 15 by 23 inches. (Revised.) Published by the Bureau of Home Economics, U. S. Department of Agriculture. 1935. For sale by the Superintendent of Documents, Government Printing Office, Washington, D. C., per set 50 cents.

It's good news to dietitians, nutrition workers, and teachers that the Nutrition Charts issued by the Bureau of Home Economics several years ago are available again in revised and expanded form. As before, these charts show pictorially the results of feeding experimental diets to laboratory rats and guinea pigs. Following two charts of a general nature entitled "Growth as an index of nutrition," and "Growth may be controlled by diet," the series shows contrasting photographs of animals that were fed on good diets and on diets deficient, respectively, in protein, calcium, phosphorus, and vitamins A, B, C, D, and G. Another chart emphasizes the importance of iron. Each chart carries, with appropriate legend, a picture of the common foods that supply that particular food constituent, thus serving as a guide to the individual in choosing a diet to safeguard health.



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DELICIOUS WHITE CAKE

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1 tablespoon vanilla	3¢
1½ lbs. pastry flour	4¾¢
1 cup egg whites	27¢
3 tablespoons Royal Baking Powder	2¢
Total	73½¢

*These costs vary, of course, according to season and locality.

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JUST CONSIDER your costs for materials to make six layers of white cake—shortening, sugar, milk, flavoring, flour and eggs.

Then think of the modest amount of baking powder you use in the recipe—3 tablespoons.

That much *Royal* Baking Powder actually costs only 2¢!

That's a pretty small amount to pay for cake of perfect texture . . . for the fluffy tenderness, finer flavor and *unequaled wholesomeness* you know Royal always gives.

The secret of Royal's superior performance is that it is made with Cream of Tartar. This pure fruit product of ripe grapes is the finest baking powder ingredient.

The next time you need baking powder, remember that there's real economy in using Royal, the famous Cream of Tartar baking powder. Write it down on your order.

Royal is the only nationally distributed baking powder made with Cream of Tartar, a natural fruit product derived from grapes.

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WHO'S WHO IN THIS ISSUE

J. M. Nielsen, B.S., M.D., F.A.C.P., is associate clinical professor of medicine (neurology), University of Southern California; junior attending physician in neurology at Los Angeles County General Hospital; and assistant in neuro-pathology at the Los Angeles County General Hospital.

Verz R. Goddard, Ph.D., was a contributor to the January, 1934, JOURNAL. **Thelma Beatty,** received the bachelor of education degree from the University of California at Los Angeles in 1932 and completed her hospital course in dietetics the same year. For the past year she has served as dietitian at San Bernardino County Hospital, San Bernardino, California. **Florence M. Sandifur** received her degree of bachelor of education from the University of California at Los Angeles in 1933. She is at present a graduate student at the University of Southern California.

Dr. A. F. Fowler graduated in medicine from McGill University in 1927 and since 1930 has held the appointment of assistant in the Department of Metabolism of the Montreal General Hospital, of which Dr. I. M. Rabinowitch is director. Dr. Fowler is responsible for all details in the routine metabolic investigations of the hospital. Aside from these duties, his investigations are largely of a chemical nature. **Eleanor V. Bazin** is the chief chemistry technician of the laboratory. For a number of years Miss Bazin was responsible for all routine chemistry analyses of the department and had as assistants twelve other technicians. During the last five years she has assisted Dr. Rabinowitch in all chemical research.

F. W. Tanner, head, Department of Bacteriology, University of Illinois, was a contributor to the November, 1933, JOURNAL. He is author of *Food-Borne Infections and Intoxications,* reviewed in this JOURNAL for March, 1934.

Helen S. Mitchell, formerly professor of physiology and nutrition at Battle Creek College, Battle Creek, Michigan, is now research professor in the division of home economics, Massachusetts State College, Amherst. Dr. Mitchell has been a frequent contributor to this JOURNAL.

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